



Hydropower Sustainability Assessment Protocol

Official Assessment

EDF

Romanche-Gavet

France

Final



11/09/2013

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Assessment Date: 10/06/13 to 14/06/13

Project stage: Implementation

Project size: 94 MW

Project type: Run of River

Cover page photo: Plant, weirs and transmission line at Les Clavaux, which will be removed, restoring visual amenity and ecological continuity.

Acronyms

Acronym	Full Text
AAH	Agence Achats Hydraulique / Group Procurement for Hydropower
AAPPMA	Association Agréée de Pêche et de Protection des Milieux Aquatiques
ABF	Architecte des Bâtiments de France
ARS	Agence Régionale de Santé
BETCGB	Bureau d'Etude Technique et de Contrôle des Grands Barrages (Bureau of Technical Study and Control of Large Dams)
CBR	Campenon Bernard Région, lead contractor on the intake and dam construction
CG38	Conseil Général 38 Isère
CIH	Centre d'Ingénierie Hydraulique
CISSCT	Collèges Interentreprises de Sécurité, de Santé et des Conditions de Travail
CLE	Commission Locale de l'Eau
CNPN	Conseil National de Protection de la Nature
COPIL	Comité de Pilotage / Management Committee
COTOREP	Commission Technique d'Orientation et de Reclassement Professionnel
COVAP	Comité de Validation de Project / Project Validation Committee
CTPBOH	Comité Technique Permanent des Barrages et des Ouvrages Hydrauliques
CTSH	Comité Technique de Sûreté Hydraulique
DCRFI	Département Côneôle des Risques Financiers et Investissements
DEKRA	Audit office in charge of the Contrôle Technique de la Construction
DPI	Division Production Ingénierie
DPIH	Division Production Ingénierie Hydraulique
DRAC	Direction Régionale des Affaires Culturelles
DREAL	Direction Régionale de l'Environnement, de l'Aménagement et du Logement
DTG	Division Technique Générale
EAP	Environmental Assurance Plan
EDF	Electricité de France
EMS	Environmental Management System
ENGO	Environmental Non-governmental Organisation
ESIA	Environmental and Social Impact Assessment, used to refer to the Environmental and Social Studies conducted in 1999 for the Romanche-Gavet project
FRAPNA	Fédération Rhône-Alpes de Protection de la Nature
ICOLD	International Commission on Large Dams
IEA	International Energy Agency
IHA	International Hydropower Association

IPHE-S	Ingénierie du Parc Hydraulique en Exploitation – Sûreté
MEEDDM	Ministère de l'Ecologie, du Développement Durable et de l'Energie
MOA	Maitrise d'Ouvrages / Manager of Works
MOE	Maîtrise d'Œuvre / Manager of Studies
MRE	Maison Romanche Energie
OH&S	Occupational Health and Safety
ONEMA	Office National de l'Eau et des Milieux Aquatiques
QSSE	Quality, Security, Safety and Environment
RDD	Risques et Développement Durable
SER	Syndicat des Energies Renouvelables
SIERG	Syndicat Intercommunal des Eaux de la Région Grenobloise
SPIE	Lead Contractor on Tunnelling Works
SPS	Sécurité et Protection de la Santé
TBM	Tunnel Boring Machines
UFE	Union Francaise de Electricité
UP Alpes	Unité de Production Alpes
VCT	Vinci Construction Terrassement
WBCSD	World Business Council for Sustainable Development
ZNIEFF	Zone Naturelle d'Intérêt Ecologique, Faunistique et Floristique

Table of Contents

Acronyms.....	ii
Table of Contents	iv
Executive Summary	v
Sustainability Profile.....	vii
Table of Significant Gaps	viii
Introduction.....	1
1 Communications and Consultation (I-1).....	7
2 Governance (I-2)	12
3 Environmental and Social Issues Management (I-3)	18
4 Integrated Project Management (I-4).....	25
5 Infrastructure Safety (I-5)	30
6 Financial Viability (I-6).....	35
7 Project Benefits (I-7)	39
8 Procurement (I-8).....	43
9 Project-Affected Communities and Livelihoods (I-9).....	48
10 Resettlement (I-10)	54
11 Indigenous Peoples (I-11)	54
12 Labour and Working Conditions (I-12).....	55
13 Cultural Heritage (I-13)	62
14 Public Health (I-14)	69
15 Biodiversity and Invasive Species (I-15).....	72
16 Erosion and Sedimentation (I-16)	78
17 Water Quality (I-17)	84
18 Waste, Noise and Air Quality (I-18)	89
19 Reservoir Preparation and Filling (I-19)	93
20 Downstream Flow Regimes (I-20).....	96
Appendix A: Written Support of the Project Developer	100
Appendix B: Verbal Evidence	101
Appendix C: Documentary Evidence	104
Appendix D: Visual Evidence	131

Executive Summary

This report presents the findings of an assessment of the Romanche-Gavet Project using the Implementation Stage tool of the Hydropower Sustainability Assessment Protocol. The Romanche-Gavet project is a 94 MW project in the implementation stage, located on the right bank of the middle section of the Romanche river in the Isère department in south-eastern France. The project will replace six facilities on the Romanche River which were built in the early 20th century and have a total capacity of 82 MW, thereby increasing average annual generation by over 30%. This assessment was carried out over the period May to July 2013, with an on-site assessment encompassing a visit to the project site and interviews with stakeholders conducted in the week beginning 10th June 2013. This assessment meets the requirements of an Official assessment, as set out in the Terms and Conditions for the Use of the Protocol.

Romanche-Gavet has relatively limited adverse environmental and social impacts, and has the potential to deliver long term benefits for the local community. The design of the project directly addresses the need to reduce adverse impacts of hydropower generation in the Romanche valley through the removal of the old plants and water transport infrastructure, improvement in conditions for recreation and tourism, and use of some of the decommissioned plants for cultural heritage conservation or economic purposes.

EDF holds two concessions to operate the plants, one for the construction and operation of the new project, and one for the operation and then decommissioning by 2020 of the six existing plants. Under the French concession system, the French state remains the owner of the facilities. A range of governmental and regulatory authorities are also involved in the preparation and implementation of the new project, and the decommissioning of the existing plants.

The findings of this assessment reflect very high performance against the Protocol topics and criteria. EDF and its partners meet this high level of performance through a combination of EDF's corporate management systems, careful compliance with applicable legal requirements, and an open working relationship between the EDF project office and the local community.

Romanche-Gavet satisfies the Protocol's criteria of 'proven best practice' on eleven out of eighteen topics: Communications and Consultation; Integrated Project Management, Infrastructure Safety; Financial Viability; Project Benefits; Procurement; Project-affected Communities and Livelihoods; Public Health; Biodiversity and Invasive Species; Reservoir Preparation and Filling; and Downstream Flow Regimes.

It meets or exceeds the Protocol's criteria of 'basic good practice' on all remaining topics. On six of these, basic good practice is exceeded, owing to only one significant gap against proven best practice. Most of these gaps concern the absence of management processes to anticipate and respond to opportunities that become evident during implementation (on the Management criterion of the Protocol).

On I-2 (Governance) there is an absence of processes to manage risks and opportunities for the application of corporate governance requirements at the project level. On I-3 (Environmental and Social Issues Management) there is no process in place to systematically identify and address emerging opportunities to improve environmental issues associated with the project. On I-16 (Erosion and Sedimentation) there is no process in place to identify and respond to emerging opportunities to improve erosion and sedimentation issues associated with the project. On I-17 (Water Quality) there is no process in place to identify emerging opportunities to improve water quality and no examples of new opportunities could be identified by this assessment. On I-18 (Waste, Noise and Air Quality) there is no process to anticipate and respond to emerging opportunities for waste management, and (considered the same gap but corresponding to the Outcomes criterion of the Protocol) the project does not contribute to addressing waste management issues beyond its own impacts.

One remaining topic performs with two gaps against proven best practice, resulting in a score equal to basic good practice under the Protocol's scoring system. On I-13 Cultural Heritage, there is an absence of adequate

processes both to respond to the risk that EDF will be required by its concession obligations to destroy heritage, and to respond to the opportunity to conserve heritage for the economic development of the valley (on the Management criterion). In addition, there are no plans to mitigate the loss of some of less valued components of the heritage of the decommissioned plants (Outcomes criterion). EDF is not the owner of the facilities, and these gaps are not a reflection on EDF's performance, but result from the authorities' governance of the decommissioning process.

As described above, the performance of the project is very high. The results show a striking pattern: no significant gaps on the Stakeholder Engagement, Stakeholder Support, and Conformance/ Compliance criteria; very few on Assessment and Outcomes; and on the Management criterion, gaps across a number of topics that reflect the absence of processes to anticipate and respond to opportunities, which at a level of proven best practice is defined as beyond what a project would be required to do manage its impacts responsibly.

Two topics, I-10 Resettlement and I-11 Indigenous Peoples, are Not Relevant to Romanche-Gavet. The scores for all topics are summarised in the following Sustainability Profile and Table of Significant Gaps.

Sustainability Profile

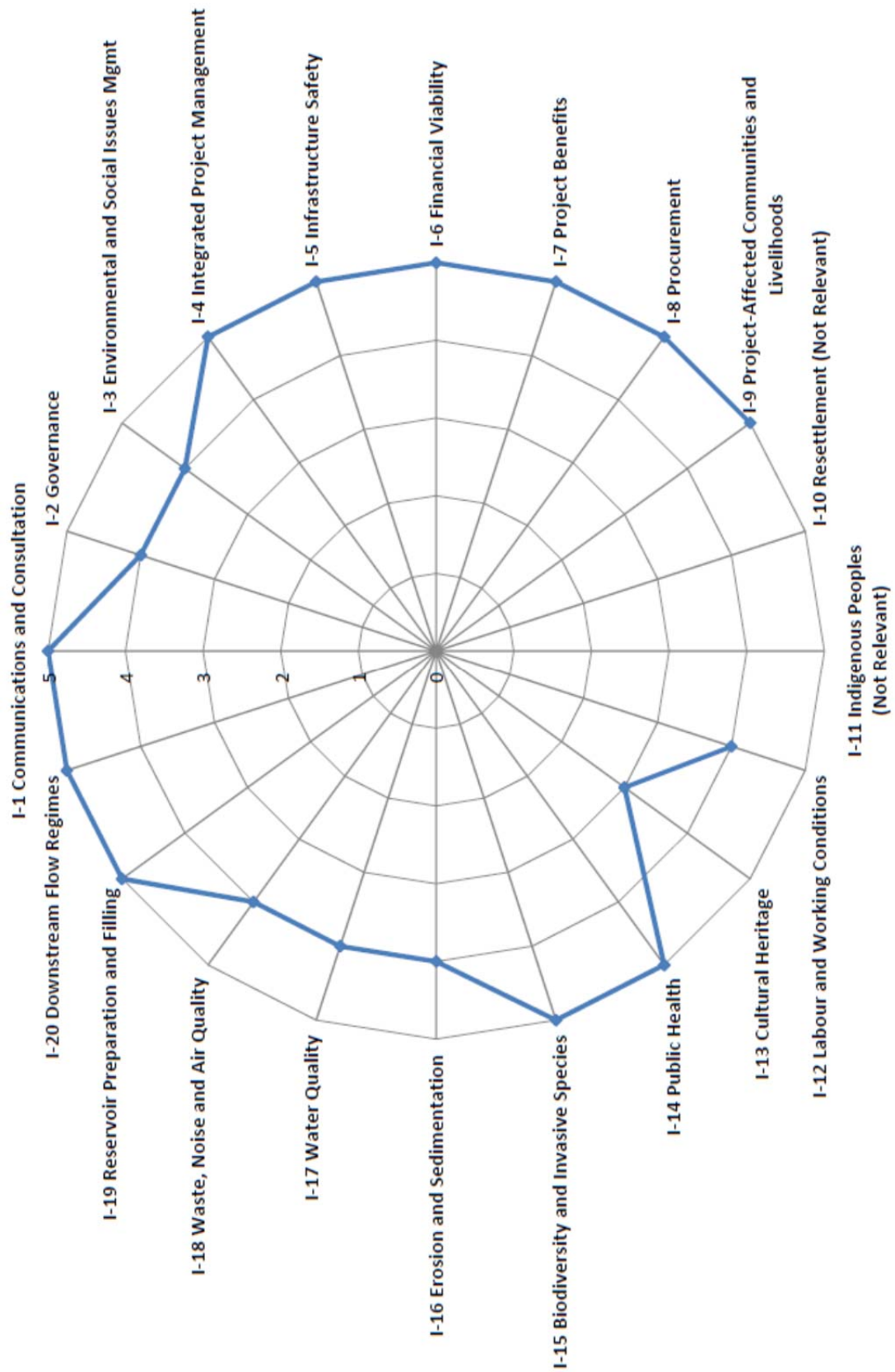


Table of Significant Gaps

	Level 3: Significant Gaps against Basic Good Practice	Level 5: Significant Gaps against Proven Best Practice
Assessment	No significant gaps	No significant gaps
Management	No significant gaps	<p>I-2 The absence of processes to manage risks and opportunities for the application of corporate governance requirements at the project level.</p> <p>I-3 There is no process in place to systematically identify and address emerging opportunities to improve environmental issues associated with the project.</p> <p>I-13 Regulatory authorities do not have a process to respond to the risk that EDF will be required by its concession obligations to destroy Livet I and II, and there are no processes to respond to the opportunity to conserve this heritage for the economic development of the valley.</p> <p>I-16 There is no process in place to identify and respond to emerging opportunities to improve erosion and sedimentation issues associated with the project.</p> <p>I-17 There is no process in place to identify emerging opportunities to improve water quality and no examples of new opportunities that have been taken by EDF could be identified by this assessment.</p> <p>I-18 There is no process to anticipate and respond to emerging opportunities for waste management.</p>
Stakeholder Engagement	No significant gaps	No significant gaps
Stakeholder Support	No significant gaps	No significant gaps
Conformance/ Compliance	No significant gaps	No significant gaps
Outcomes	No significant gaps	<p>I-12 The lack of demonstrated evidence that contractors' and suppliers' practices are consistent with internationally-recognised labour rights and EDF's commitments.</p> <p>I-13 The absence of plans to mitigate the loss of some of less valued components of the heritage of the decommissioned plants is a significant gap against proven best practice..</p> <p>I-18 The project does not contribute to addressing waste management issues beyond its own impacts.</p>

Introduction

This report presents the findings of an assessment of the Romanche-Gavet Project using the Hydropower Sustainability Assessment Protocol. Romanche-Gavet is a 94 MW project under construction in the south-east of France.

The Hydropower Sustainability Assessment Protocol

The Hydropower Sustainability Assessment Protocol ('the Protocol') is a framework to assess the performance of hydropower projects according to a defined set of sustainability topics, encompassing environmental, social, technical, and financial issues.

Developed by the International Hydropower Association (IHA) in partnership with a range of government, civil society and private sector stakeholders, the Protocol is a product of intensive and transparent dialogue concerning the selection of sustainability topics and the definition of good and best practice in each of these topics. Important reference documents that informed the development of the Protocol include the World Bank safeguards policies, the Performance Standards of the International Finance Corporation, and the report of the World Commission on Dams. To reflect the different stages of hydropower development, the Protocol includes four assessment tools that are designed to be used separately, corresponding to the Early Stage, and Preparation, Implementation and Operation stages of a project.

Applying the Protocol delivers an evidence-based assessment of performance in each topic, with a set of scores providing an indication of performance in relation to basic good practice and proven best practice. The scoring system is as follows:

- 5 Meets basic good practice and proven best practice;
- 4 Meets basic good practice with one significant gap against proven best practice;
- 3 Meets basic good practice with more than one significant gap against proven best practice;
- 2 One significant gap against basic good practice;
- 1 More than one significant gap against basic good practice.

This means that if there is one or more gap(s) at the level of basic good practice, the topic cannot score higher than a 2 or a 1, respectively. Only if all criteria at the level of basic good practice are satisfied will the assessor move on to the criteria for the level of proven best practice.

Assessments rely on objective evidence to support a score for each topic that is factual, reproducible, objective and verifiable. Key attributes of the Protocol are: (i) global applicability, i.e. it can be used on all types and sizes of hydropower projects, anywhere in the world; and (ii) consistency, i.e. the consistency of its application is carefully governed by a system of quality control encompassing accredited assessors, terms and conditions for use, and the Protocol Council.¹

Scoring is an essential feature of the Protocol, providing an easily communicated and replicable assessment of the project's strengths, weaknesses and opportunities. The scoring system has been devised to ensure that a Protocol Assessment cannot provide an overall 'pass' or 'fail' mark for a project, nor can it be used to 'certify' a project as sustainable. The Protocol provides an effective mechanism to continuously improve sustainability performance because results identify gaps that can be addressed, and the findings provide a consistent basis for dialogue with stakeholders.

¹ Full details of the Protocol and its governance, are available on www.hydrosustainability.org.

Assessment Objectives

The main objective of an official assessment is to obtain impartial and verifiable findings on the performance of the Romanche-Gavet project in relation to the sustainability issues set out in the implementation and preparation tools.

In addition to this main goal for the assessment of Romanche-Gavet, as it has been described before, EDF expects:

- To identify how appropriate the Protocol is for EDF and France in general;
- To benchmark EDF to international companies and best practices;
- To evaluate the sustainability of the Romanche-Gavet project (the biggest project in development in France) by preparing this official assessment;
- To identify risks and thus to find improvement opportunities in the project both during construction phase of the new plant and preparation of the decommissioning of the six existing HPPs; and
- To ensure transparency of the project and engagement of stakeholders.

Project Description

The Romanche-Gavet project is a 94 MW project in the implementation stage, located on the right bank of the middle section of the Romanche river, 30 km from Grenoble, in the Isère department in south-eastern France. The project will replace six facilities on the Romanche River which were built in the early 20th century and have a total capacity of 82 MW. Romanche-Gavet has an expected average generation output of 560 GWh/yr, greater than the average output of 405 GWh of the six facilities to be replaced.

EDF (Électricité de France SA) holds two concessions concerning the Romanche-Gavet project:

- Concession 'Moyenne Romanche' (middle Romanche) to operate the six existing plants, with decommissioning required by 2020;
- Concession 'Gavet' for the construction of the new plant, and its operation until 2070.

The main features of the new plant are:

- Head of 270 m;
- An intake with a maximum capacity of 41 m³/s;
- A headrace tunnel, 9.3 km in length and 4.7 m in diameter;
- A vertical surge shaft, 180 m deep with an excavated diameter of 5 m;
- A steel-lined pressure shaft, 170 m deep and 3.3 m in diameter;
- An underground power plant excavated 160 m below ground;
- Two francis turbines of 47 MW;
- A tailrace tunnel, 170 m in length with an excavated diameter of 5.3 m;
- Outlet structures consisting of a regulating weir and gates, and a concrete structure housing four energy dissipators; and
- A new 63 kV transmission line.

Apart from the intake and outlet structures and the transmission line, all structures of the project will be wholly underground. The transmission line will be partially underground.

The reservoir will have an insignificant capacity, but will be kept level at El 705, and the plant will be operated as run-of-river.

The facilities to be decommissioned are, from upstream to downstream: Livet, Les Vernes, Les Roberts, Riouperoux, Les Clavaux, and Pierre Eybesse. The structures to be removed will include power intakes, galleries, headrace channels, penstocks, powerhouses, generating units and transmission lines.

The following table summarises the timing of the project, Figure 1 provides an overview, and Figure 2 provides a schematic diagram of the project.

	New plant	Decommissioning
2010	Concessions awarded and preliminary construction and access roads began	Concessions awarded
2011	Preliminary stabilisation	
2012	Gallery excavation began	Preliminary design and selection of solutions
2013	Gallery and cavern excavation, construction of the dam; construction of the dam and the water intake	Preliminary design and selection of solutions; detailed design
2014	Installation of electromechanical equipment	Detailed design
2015	Installation of electromechanical equipment	Detailed design; regulatory state investigation
2016	Installation of electromechanical equipment; impoundment and first tests	Regulatory state investigation
2017	Commissioning	Cease operation
2018		Decommissioning works, rehabilitation
2019		Decommissioning works, rehabilitation
2020		31 December, end of concession.

Implementation and operation of the new plant, and decommissioning of the old plants is managed by Unité de Production Alpes (UP Alpes), one of five units of production (corresponding to regions of France) in EDF's Hydropower Generation and Engineering Division (Division Production Ingénierie Hydraulique, DPIH). UP Alpes is the region for the northern Alps.

UP Alpes has commissioned the DPIH's Centre d'Ingénierie Hydraulique (CIH) to manage implementation of the new plant and decommissioning, through two separate projects. EDF is part of the multinational EDF Group, which also owns or has holdings in transmission companies in France, and utilities across Europe and internationally. EDF Group is 80% owned by the French state.

Please note that throughout this report:

- 'The Romanche-Gavet project', 'Romanche-Gavet', or 'the project' is used to refer to the entire project, ie. both the new plant and the decommissioning of the old plants;
- Where reference to only the new plant or the decommissioning project is intended, 'new plant', 'new facility', 'new project', 'decommissioning project' or 'decommissioning' are used;

'EDF' refers to Électricité de France SA, ie. the company operating in France. Where reference to EDF Group is intended, 'EDF Group' is used.

'MOA-project manager' or 'MOA' is used to refer to the *Maitrise d'Ouvrages* ie. the manager of the entire project. 'MOE project manager construction' or 'MOE-construction' is used to refer to the *Maîtrise d'Œuvre* ie. the manager of the construction project, and 'MOE project manager decommissioning' or 'MOE-decommissioning' is used to refer to the *Maîtrise d'Œuvre* ie. the manager of the decommissioning project.

Vertical structures

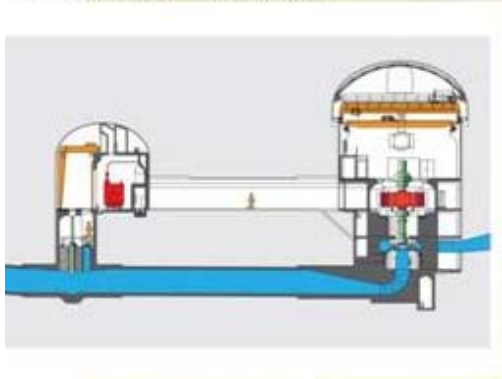
Surge shaft: 180m deep x 4,8m diameter
Steel-lined pressure shaft: 163m deep x 3,3m diameter

Underground Powerstation

2 caverns: 74m x 16m x [25 à 35 m]
64m x 11m x 15 m
Excavation 45.000 m³

Headrace tunnel

9,3 km long,
4,7 m diameter
Excavation: 170.000 m³



Outlet structures

Restitution structure
Energy dissipators

Inlet structures

A gate-structure dam
3 gates, each 10m wide

A water intake structure

Figure 1. Overview of the Romanche-Gavet project, provided by EDF.

**Schematic view of
Gavet-Romanche
project:
EDF has decided
to replace 6 HPPs
by a single new
HPP**

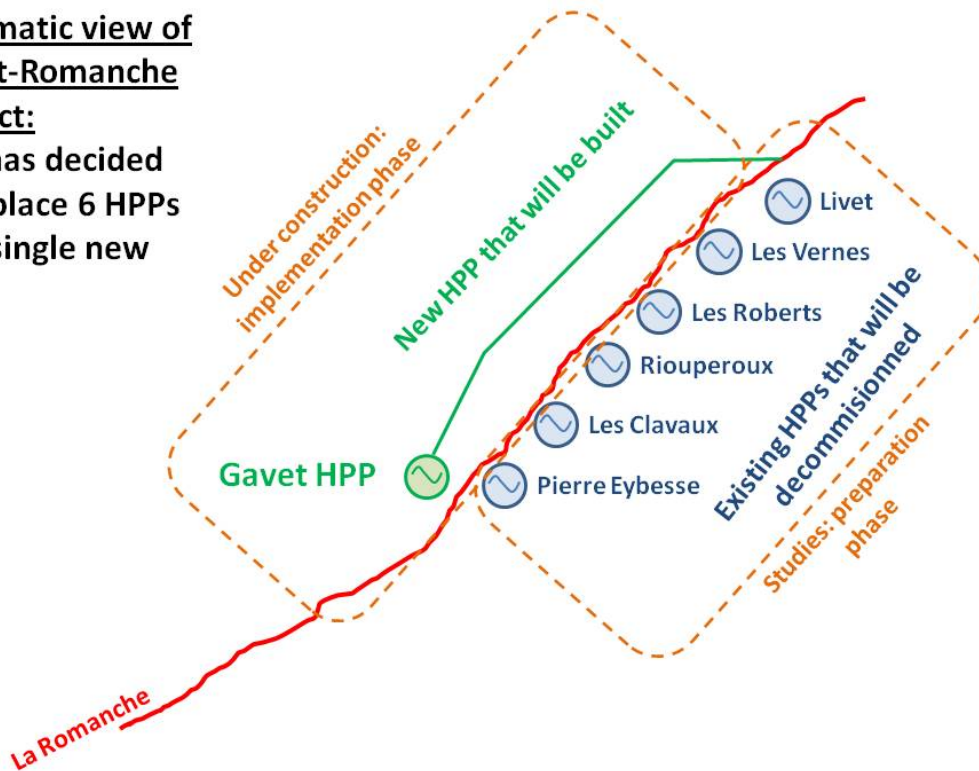


Figure 2. Schematic representation of the construction and decommissioning projects, provided by EDF.

Assessment Process

The assessment has been conducted using the Implementation assessment tool, which contains 20 individual topics addressing governance, technical, financial, social and environmental issues.

It is important to note that this assessment addresses the entire Romanche-Gavet project, including both the new project that is under implementation, and the decommissioning project which is under preparation. Reference has been made to the Preparation tool in specific cases where it offers relevant additional guidance for the assessment of the decommissioning project.

This assessment was carried out as part of the IHA – EDF Sustainability Partnership. IHA provided a team of assessors to conduct the assessment. The on-site phase was conducted over 10-14 June 2013, and comprised a site visit, and interviews held mainly at the Gavet Maison Romanche Energie and in Grenoble, but also at Saint Egreve, Vif, and videoconference with Paris and the University of Liège in Belgium.

A draft report was delivered to EDF in July 2013, and amended in response to comments received from EDF in September 2013.

This is an official assessment. The assessment team are accredited by IHA, and the assessment was conducted with the full support of EDF, as demonstrated by their written support, reproduced in Appendix A.

The assessment was supported by the Single Point of Contact, Emmanuel Branche. Three interpreters, (Christie O'Brien, Bernadette Goth and Benjamin Penin) were used to assist the team, none of whom are French speakers. There were no observers to the assessment.

Assessment Experience

This section addresses limitations and reflections relevant to this assessment.

The assessment was organised well by Emmanuel Branche of EDF (the single point of contact) in a short period prior to the assessment, with the assistance of Florent Baud, Project Manager MOA, and Paul Gaudron, Project Manager MOE for Construction, and Jacques Michalewski, Project Manager MOE for Decommissioning. They assembled a substantial amount of documentary evidence, and achieved a commendable level of interviews with external stakeholders. Where the assessment team identified the need for further evidence or clarifications, the single point of contact responded comprehensively in a timely fashion.

The need for interpretation was resolved with the use of three very capable interpreters, but many interviews were conducted in English where the interviewee felt comfortable with their knowledge of English.

All documentary evidence, with the exception of a few corporate-level documents relevant to the Governance topic, were in French. EDF provided some translations of the table of contents of key documents. However the team relied on online automated translation services for the rest of documentation. This is a time-consuming approach, and the translations occasionally can be difficult to comprehend. Although the team do not consider that reliance on automated translation has affected their ability to view and interpret documentary evidence (and so it does not have any implication for findings or scores), IHA recommends that on future assessments, EDF or other project sponsors provide more translated documents than was possible for this assessment.

Romanche-Gavet is located in a developed country, meaning that some of the Protocol's scoring statements have not been relevant, specifically on I-14 Public Health. In addition, on some topics, the requirements of the Protocol's proven best practice criteria, concerning *opportunities* has required careful interpretation. For some topics, there are no practicable opportunities in the context of Romanche-Gavet. Where that is the case, any gap concerning opportunities could not be considered to be significant. A gap can only be considered to be significant where there are practicable opportunities.

The assessment team were conscious of EDF's objective that the assessment addresses the decommissioning project as much as possible. Findings for the decommissioning project have been presented clearly for most topics. Findings on each criterion are presented in the following order, as far as practicable: construction of the new project; decommissioning of the old projects; and operation of the new project.

IHA would like to thank all EDF staff involved, and all EDF interviewees and external interviewees for arranging the assessment process and providing their time to gather and provide a wealth of evidence. The team would also like to thank Claudine Chable in the Gavet office who provided greatly welcomed assistance with the arrangement of meeting rooms and refreshments throughout the week.

Layout of this Report

This report consists of twenty sections numbered in direct correspondence with the twenty topics of the Protocol's Implementation tool. Four appendices are provided, including the written letter of support of the project developer (required for an official Protocol assessment), and detailing the items of visual, verbal and documentary evidence referred to under each topic.

For each topic, findings are provided according to the criteria used in the Protocol's methodology: Assessment, Management, Stakeholder Engagement, Stakeholder Support, Conformance / Compliance, and Outcomes. Findings are presented against a statement of 'basic good practice' and a statement of 'proven best practice' for each, with a 'Yes/No' indication of whether the scoring statement is met. A summary of the significant gaps against the scoring statement, the topic score and a brief summary are presented at the close of each topic section.

1 Communications and Consultation (I-1)

This topic addresses ongoing engagement with project stakeholders, both within the company as well as between the company and external stakeholders (for example affected communities, governments, key institutions, partners, contractors, catchment residents, etc.). The intent is that stakeholders are identified and engaged in the issues of interest to them, and communication and consultation processes maintain good stakeholder relations throughout the project life.

1.1 Background Information

In France, consultations are regulated for the concession application process. At that stage, the Prefecture is responsible for appointing a consultation facilitator who organises public meetings and communications, in accordance with the regulations. The facilitator issues a report to the regulator, DREAL, which is then responsible to monitor the project's compliance with the stipulations and recommendations made. The communications and consultations during the project development phase, following award of concession, is the responsibility of the project owner, in this case EDF.

This topic deals with the general communication and consultation for the project. Communication and consultation issues specific to various other topics are dealt with under the stakeholder-related criteria under those topics.

1.2 Detailed Topic Evaluation

1.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Communications and consultation requirements and approaches have been identified through an assessment process involving stakeholder mapping, supported by ongoing monitoring.*

The communication plan from 2011 identifies the project's approach to internal and external communication and consultation, and the associated stakeholder mapping document divides stakeholders into key groups with clearly identified needs for each. The communication plan describes planned activities through the 2011-2018 period, with decreasing detail towards the end of that period. It is broken down into more detailed plans as appropriate (see below under Management).

The stakeholders are divided into six key groups: local stakeholders (at department level, municipality and individual community members); EDF's internal stakeholders; suppliers; elected decision-makers; public authorities; and civil society at large. The internal stakeholder group is subdivided into three levels: staff at the six existing plants in the Romanche valley; hydropower staff in the UP Alpes unit; and EDF's staff across France.

The decommissioning phase is expected to require a somewhat different and more detailed division of stakeholders. In the interest of identifying risks early and responding in suitable fashion, these groups have already been identified and communication/consultation has started.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, the stakeholder mapping takes broad considerations into account.*

Broad considerations are taken through a comprehensive stakeholder identification and description which establishes key linkages used to support the choice of communication strategy for each group. The identification of especially important stakeholders has taken into account the vulnerability of disadvantaged groups and young people, and accordingly the project has focused several initiatives on the local economic context of decreasing economic activity and high unemployment.

Criteria met: Yes

1.2.2 Management

Analysis against basic good practice

Scoring statement: *Communications and consultation plans and processes, including an appropriate grievance mechanism, are in place to manage communications and engagement with stakeholders; these outline communication and consultation needs and approaches for various stakeholder groups and topics.*

The communication plan is a living document subject to constant updating. The document *Communication: Revue de l'année 2012 et perspectives 2013* dated 23 January 2013, details the results of communication for 2012 and describes the strategy for 2013. A clear division is made into specific groups and their respective needs, such as the local schools, dedicated web site, national science day, public events, the press, contractors, EDF-internal stakeholders and stakeholders interested in heritage preservation.

A UP Alpes employee works 70% of her time on the project, and an EDF employee in the project office in Gavet is responsible for external relations.

Communication and consultation processes include: the use of the Gavet project offices (the Maison Romanche Energie, MRE) which is open to the public one morning and one afternoon every week; a quarterly newsletter (14 have been published so far) which consistently contains interviews with various stakeholders on issues of importance to them; frequent public meetings (two per year plus additional meetings for topics that have developed special interest) allowing for exchange of opinions and ideas, as well as providing feedback on key issues; and open houses on topics identified by stakeholders as particularly important (for example, learning about the TBM). Invitations and information regarding all public activities is distributed via fliers delivered to household mailboxes throughout the municipality, posters at the town hall and tourist office, and advertisements in the press and in the newsletter.

The MRE, with public opening hours and a log book for complaints, functions as a grievance mechanism for stakeholders. The log book notes the question/complaint filed, and the response and date of closure of the issue.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, communication and consultation plans and processes show a high level of sensitivity to communication and consultation needs and approaches for various stakeholder groups and topics; and processes are in place to anticipate and respond to emerging risks and opportunities.*

Examples of processes that show a high level of sensitivity include: several special-purpose temporary signboards erected with clear views of key construction sites, providing information for the general public and tourists passing through the valley (it is a main tourist route, for example to the Alpe d'Huez); engagement of school children in the area in a naming contest, decided by lottery draw, for the TBMs; inviting schoolchildren and other stakeholders to take part in the official TBM-naming ceremony; the timing of most of the open-house activities to weekends when more people are able to participate.

There are formal agreements with the two main contractors regarding their responsibility in terms of ongoing communication and consultation, and they take an active part in organising public information events and open houses. This approach enhances sensitivity of communications, timeliness of responses, and the ability to respond to emerging communications risks and opportunities.

The comprehensive approach to communication, the close co-operation with the municipality and the frequent public events allow timely responses to any emerging risks and opportunities. Examples of opportunities taken are the special events showcasing the TBM and the construction site. These were a response to direct stakeholder requests.

Criteria met: Yes

1.2.3 Stakeholder Engagement

Analysis against basic good practice

Scoring statement: *The project implementation stage involves appropriately timed and scoped, and often two-way, engagement with directly affected stakeholders; engagement is undertaken in good faith; ongoing processes are in place for stakeholders to raise issues and get feedback.*

The project engages with stakeholders in a variety of ways, including: the MRE opening to the public; newsletters; fliers; biannual public meetings; special public events (a recent event was attended by 1300 people, equivalent to almost the entire population of the municipality of Livet-Gavet); special purpose information signboards for the public along the Romanche valley; press articles (approximately eighty per year); and a dedicated visitors' service run by a specialist company. Beyond directly-affected stakeholders, 620 external visitors have visited the project and its construction sites so far in 2013.

Well-established, regular and frequent engagement opportunities give stakeholders good access to project staff for timely exchanges of opinions and feedback. Many stakeholders attest to the fact that they have played a major role in defining the focus of special engagements, showing a high level of responsiveness on the part of the project to expressed stakeholder needs. External stakeholders agree that engagement has been and remains good-faith and that they are freely able to raise issues and receive feedback.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, engagement is inclusive and participatory; negotiations are undertaken in good faith; and feedback on how issues raised have been taken into consideration has been thorough and timely.*

EDF and the project has provided opportunities for all concerned to participate in communication and consultation activities. Negotiations and consultations have been undertaken in good faith with keen attention to aspects of importance to stakeholders, information provision, and agreements on mitigation and development interventions.

Feedback is constantly provided, both directly to stakeholders raising issues and generally through, for example, the newsletter on issues of wider relevance. Interviewees uniformly confirm that this feedback has been both thorough and timely. An indication of the success of the adopted approach to stakeholder engagement is that the number of visitors to the MRE is decreasing in 2013 compared to 2012, attesting to the fact that the stakeholders feel sufficiently informed and satisfied with the way the project has responded to issues raised.

The newsletter has standing feature sections of interest to stakeholders, both to provide information and to provide feedback and an opportunity for stakeholders to voice their interests and concerns. Every issue has a

specific note of environmental interest, one on heritage and about two thirds of a page dedicated to stakeholders.

Criteria met: Yes

1.2.4 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives relating to communications and consultation have been and are on track to be met with no major non-compliances or non-conformances, and communications related commitments have been or are on track to be met.*

The only regulatory requirement for communications and consultations is for the period before a concession is granted. The required consultations were initiated in 2002 and were the responsibility of the Prefecture and were successfully implemented, prior to the granting of the concession. DREAL is responsible for following up on any requirements detailed in the concessions and they report that there are no non-compliances identified.

During the construction phase, EDF, as part of its general corporate policies, has committed in general terms to “communicating with stakeholders”. This has been translated into action through, for example, maintaining an open house certain hours of the week, publishing a newsletter and conducting regular public information/consultation meetings. All of these activities have been implemented and continue to be implemented.

EDF, in co-operation with Stakraft of Norway, have published a World Business Council for Sustainable Development (WBCSD) paper outlining their approach to meaningful engagement with stakeholders. It identifies five key principles – transparency, inclusiveness, materiality, measurement and responsiveness. There are no identified non-conformances against these principles.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances*

There are no identified non-compliances or non-conformances.

Criteria met: Yes

1.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

1.3 Scoring Summary

Through its communication plan and stakeholder mapping, the project has assessed its stakeholders and determined suitable processes for engaging these in a two-way and participatory manner, and any negotiations are undertaken in good-faith. Stakeholders have been included in the prioritisation of activities and events and there are various regular fora for the provision of both consultation and information. Notable examples are the

Maison Romanche Energie, the regular newsletter and the well-attended public-information events that have been organised at the request of the community. Stakeholders attest to a successful climate for consultation and communication, providing a basis for maintaining good stakeholder relations through the construction and decommissioning components of the project.

There are no significant gaps against proven best practice, resulting in a score of 5.

Topic Score: 5

1.4 Relevant Evidence

Interview:	6, 8, 9, 10, 13, 23, 30, 34, 35, 37, and 41
Document:	24, 48, 50-56, 62, 63, 64, 264-276 and 296-299
Photo:	1, 2, 3, 4 and 5

2 Governance (I-2)

This topic addresses corporate and external governance considerations for the operating hydropower facility. The intent is that the owner/operator has sound corporate business structures, policies and practices; addresses transparency, integrity and accountability issues; can manage external governance issues (for example institutional capacity shortfalls, political risks including transboundary issues, public sector corruption risks); and can ensure compliance.

2.1 Background Information

EDF Group corporate structures, policies and practices are relevant to this topic, as well as the processes of DPIH, and the structures established for the Romanche-Gavet project's implementation and subsequent operation. UP Alpes within DPIH is the developer and operator of Romanche-Gavet, whilst CIH is internally contracted to UP Alpes to manage the project's implementation. EDF has won the concessions, described in the background section above, but the French state is the owner of all facilities.

External governance issues and risks are limited in the case of Romanche-Gavet. One issue is the challenge of meeting the French state's and the local stakeholders' interests in the decommissioning of the old plants to return the valley to a more natural and visually-appealing condition, whilst also satisfying some local stakeholders' interests in the heritage value of some of the old plants. The main governmental stakeholders are at the local level: Livet-Gavet municipality, Conseil Général d'Isère and the Prefecture d'Isère. At a national level, DPIH is an important stakeholder itself, as the new Romanche concession is first amongst a number of concessions under renewal in the coming years, and they would like the project to demonstrate the value of hydro to local stakeholders.

Policies for corporate governance include the EDF Group's nine commitments on sustainable development (responding to three challenges, the environment, social responsibility, and governance), eleven commitments in three areas on corporate responsibility (a responsible producer, responsible employer, and responsible partner), and a Code of Ethics. These are available on EDF's website.

2.2 Detailed Topic Evaluation

2.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Processes are in place to identify any ongoing or emerging political and public sector governance issues, and corporate governance requirements and issues, and to monitor if corporate governance measures are effective.*

Processes to identify ongoing and emerging political and public sector issues lie at EDF Group, DPIH and *Directoire* levels.

For very broad issues, the EDF Group Board (consisting of six directors appointed by the shareholders meeting, six directors appointed by the French state, and six directors elected by employees) and its five committees (including an audit committee, ethics committee and strategy committee) are responsible for corporate governance, and this is demonstrated by inclusion of sections concerning hydropower in the group-level Annual Reports and Sustainable Development reports. At the broadest of levels, a report by the EDF Group Chairman on corporate governance, internal control and risk management procedures annexed to each annual report is a process to identify corporate governance requirements and the assess the effectiveness of corporate governance measures.

DPIH's participation in national, EU, and international initiatives concerning hydropower and renewables are additional processes to identify governance issues. DPIH is active in IHA, the IEA Implementing Agreement for Hydropower Technologies and Programmes, ICOLD and Eurelectric, and in France in UFE (*Union Française de l'Électricité*) and SER (*Syndicat des Énergies Renouvelables*). At the national level, DPIH has signed an agreement with government and NGOs on sustainable hydro, and at the EU level, it has worked with Eurelectric on the implications of the Water Framework Directive.

The project *Directoire* serves to identify and manage risks and issues of any kind, including emerging political and public sector risks for project implementation, though it does not identify corporate governance requirements or monitor whether Group-level corporate governance is effective on the project, and governance is not explicitly referred to in *Directoire* minutes. The latter is an area for improvement but is not a significant gap.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no significant opportunities for improvement in the assessment of political and public sector governance issues and corporate governance requirements and issues.*

The assessment of governance issues and requirements is comprehensive, addressing all of the requirements set out in the Protocol (business administration, risk management, CSR, ethical business practice, compliance etc; set out on topic I-2 'Assessment Guidance' in the Protocol). There is no indication of any requirements for improvement in EDF's assessment of governance issues and requirements.

Criteria met: Yes

2.2.2 Management

Analysis against basic good practice

Scoring statement: *Processes are in place to manage corporate, political and public sector risks, compliance, social and environmental responsibility, procurement of goods and services, grievance mechanisms, ethical business practices, and transparency; policies and processes are communicated internally and externally as appropriate; and independent review mechanisms are utilised to address sustainability issues in cases of project capacity shortfalls, high sensitivity of particular issues, or the need for enhanced credibility.*

EDF Group-level processes are in place to manage these requirements, including the Board-level responsibilities described above, the corporate environmental management system which is certified to ISO 14001, corporate quality management system certified to ISO 9001, procurement procedures which meet French and EU legal requirements, anti-fraud measures, the corporate Code of Ethics, a whistleblower mechanism, and the involvement of unions to raise employee grievances. Further details are set out in topics I3, I-5, and I-8. At the level of this project's *Directoire*, a lawyer is included within the *Directoire* with the responsibility of raising awareness of legal issues, assisting with legal compliance.

Policies are communicated externally via the EDF Group website. It is not clear how these policies are communicated internally, but all EDF interviewees maintained that all of their work is guided by such policies and the management system they implement results from corporate systems. Examples of evidence for this are the correspondence of the DPIH Environmental Policy (part of the ISO 14001-certified system) with the EDF Group Sustainable Development Commitments, and verbal reference to the three elements of the Code of Ethics (respect, solidarity, responsibility) by all employees who were asked during this assessment if they were aware of corporate-level policies.

The company employs independent review in cases of high sensitivity of particular issues, for example, an annual review of dam safety is conducted at a national level. It is not clear what would prompt the use of independent review at a local level on the Romanche-Gavet project. However, this is not a significant gap, as any local capacity shortfalls are met by CIH nationally, issues are not highly sensitive, and the use of government agencies for certain studies (for example, ONEMA for fish studies, DREAL for infrastructure safety, and the CG38 for cultural heritage) has provided sufficient objectivity and credibility. Note that validation mechanisms within CIH are used to validate consultants' studies, and a technical review committee (including external stakeholders) was used to review the University of Liège studies (see I-16), and a group of stakeholders was brought together to oversee the Gaia study (see I-13).

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, contractors are required to meet or have consistent policies as the developer; procurement processes include anti-corruption measures as well as sustainability and anti-corruption criteria specified in pre-qualification screening; and processes are in place to anticipate and respond to emerging risks and opportunities.*

Contractors are required to have policies consistent with the Sustainable Development Charter, environmental requirements, and anti-fraud and sustainability requirements are included in procurement processes (see I-8, and also refer to I-12 proven best practice).

At the group level, emerging risks are assessed in the Annual Financial Report, for example identifying risk factors associated with European energy markets. The management of hydropower safety risk is addressed at this level, and concessions renewal and access to water are cited as other risks.

The *Directoire's* lawyer has the responsibility of anticipating emerging legal risks, and the *Directoire* is in place to respond. However it is not clear that the *Directoire* provides a mechanism to anticipate and respond to emerging opportunities (such as improved internal processes, or new methods for tracking compliance) or what other processes serve to ensure this. Despite the comprehensive corporate governance processes at the group level, the means by which these processes apply to the level of the Romanche-Gavet project is not clear to the assessment team. It is clear that the management systems applied are effective (see I-3, I-4 and I-8 for example) and that they derive from corporate processes. However few staff interviewed were aware of corporate governance commitments other than the Code of Ethics, for example they had no awareness of the whistle-blowing mechanism. It was not made clear to the assessment team how the quality control system is applied (which was described as consisting of procedures for organisational notes, archiving, processes, validation of contracts, tracability, non-compliance sheets, and inspectors / section managers) and most interviewees could not point to the framework of procedures used for both environmental and quality management. The absence of processes to manage risks and opportunities concerning the application of corporate governance requirements at the project level is a **significant gap**.

Criteria met: No

2.2.3 Stakeholder Engagement

Analysis against basic good practice

Scoring statement: *The business interacts with a range of directly affected stakeholders to understand issues of interest to them; and the business makes significant project reports publicly available, and publicly reports on project performance, in some sustainability areas.*

The MOA project manager interacts with a range of directly-affected stakeholders, as described in detail on topic I-1. The President of the Conseil Général has visited the site and is kept informed, and local MPs are consulted. At a national-level, DPIH interacts with MEEDDM to ensure concession requirements are met.

Significant project reports, such as the concession documents and ESIA, were made available during the *enquête publique* (public inquiry, a formal legal process concerning the democratization of public inquiry and the protection of the environment) in 2009-2010, and remain at the municipality, available on request. EDF made the public aware of this process, for example through a project newsletter in 2009. Decrees awarding the concessions are available on www.legifrance.gouv.fr. UP Alpes provides regular newsletters (thirteen since 2009) on progress of the project and a press kit on its website.

More generally, UP Alpes makes brochures on most of its operating facilities available through its website, and reports on its operating projects publicly during dedicated meetings, for instance ‘water stakeholder meetings’ (water board meetings). At a national level, EDF reports annually to the public on the dam safety of all projects in France.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, the business makes significant project reports publicly available and publicly reports on project performance in sustainability areas of high interest to its stakeholders.*

The reports described above are of high interest to stakeholders. Reporting on the progress of the Romanche-Gavet project is tailored to the interests of the local community through regular newsletters.

Criteria met: Yes

2.2.4 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *The project has no significant non-compliances.*

The *Directoire* has the responsibility to ensure legal compliance. No non-compliances were evident during this assessment.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *The project has no non-compliances.*

No non-compliances were evident during this assessment.

Criteria met: Yes

2.2.5 Outcomes

Analysis against basic good practice

Scoring statement: *There are no significant unresolved corporate and external governance issues identified.*

As stated in the background, external governance issues and risks are limited in the case of Romanche-Gavet. The challenge of satisfying the concession requirements to decommission all projects whilst also preserving cultural heritage is resolved for Les Vernes owing to a recent agreement with DREAL, and on track to be resolved for Livet I and II assuming an investor can be found and that the solution meets DREAL’s requirements. The governance issue raised by the conflict between decommissioning and heritage

conservation concerns these three sites as the most significant heritage sites. Issues of heritage conservation of the other sites is addressed under I-13.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no unresolved corporate and external governance issues identified.*

There are no unresolved corporate or external governance issues.

Criteria met: Yes

2.2.6 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

The absence of processes to manage risks and opportunities for the application of corporate governance requirements at the project level.

1 significant gap

2.3 Scoring Summary

EDF Group processes, the *Directoire*, and DPIH’s participation national, EU, and international initiatives concerning hydropower and renewables are processes to identify ongoing and emerging political and public sector issues. EDF processes, including environmental and quality management systems, procurement procedures, and the corporate Code of Ethics, are in place to manage corporate, political and public sector risks, compliance, social and environmental responsibility, procurement of goods and services, grievance mechanisms, ethical business practices, and transparency. These are communicated internally and externally, the company employs independent review in cases of high sensitivity of particular issues, and contractors are required to have consistent sustainability and anti-corruption procedures. Emerging risks are addressed by the *Directoire* and its lawyer.

Locally, the MOA project manager interacts with a range of directly-affected stakeholders, and project reports, such as the concession documents and ESIA, are made available. External governance issues and risks are limited in the case of the Romanche-Gavet project, and the most significant unresolved issues, concerning the reconciliation of the concession requirements with cultural heritage conservation, are resolved or on track to be resolved.

Despite the comprehensive corporate governance processes at the group level, the means by which these processes apply to the level of the Romanche-Gavet project is not clear, and an assessment of political and public sector risk or corporate governance requirements for the project level, during both implementation and operation, has not been made. The absence of processes to manage risks and opportunities for the application of corporate governance requirements at the project level is a significant gap.

Topic Score: 4

2.4 Relevant Evidence

Interview:	5, 7, 16, 22, 28, 36, 40, 43, 47
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Document:	16, 17, 18, 19, 20, 21, 26, 36, 37, 38, 39, 48, 57, 58, 59, 60, 61, 76, 77, 78, 82, 165, 244, 280
Photo:	None

3 Environmental and Social Issues Management

(I-3)

This topic addresses the plans and processes for environmental and social issues management. The intent is that negative environmental and social impacts associated with the hydropower facility are managed; avoidance, minimisation, mitigation, compensation and enhancement measures are implemented; and environmental and social commitments are fulfilled.

3.1 Background Information

The Gavet project is being executed within the context of a demanding regulatory environment which governs much of EDF's approach to the assessment and management of environmental and social issues. The key state institution is *Les Directions Régionales de l'Environnement, de l'Aménagement et du Logement* (DREAL), formed in 2009, which is responsible for a number of aspects of the project including water planning, water quality, implementation of the water framework directive, ecological monitoring, hydropower concessions and environmental impact assessment. DREAL checks that projects presented by EDF meet all relevant environmental legislation, and they continue to monitor the project through construction and operation to ensure compliance by EDF with the terms of the concession.

This topic largely concerns the processes for environmental and social issues management referring to issues which are fully addressed by other topics to illustrate these processes. Please refer to others topics for a fully-detailed discussion of the pertinent issues.

3.2 Detailed Topic Evaluation

3.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Environmental and social issues relevant to project implementation and operation have been identified through an assessment process, including evaluation of associated facilities, scoping of cumulative impacts, role and capacity of third parties, and impacts associated with primary suppliers, using appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.*

A number of environmental and social studies have been undertaken to assess the potential impact of the project through each of its stages.

EDF prepared an ESIA for the new project in 1999, structured around the requirements of the regulator. It was first submitted in 2001 to DREAL's predecessor, and finally approved in 2009, with the delay due to the slow process of the concession award. In the period between submission and approval, the ESIA was updated with new studies, requested by the Prefecture. The area assessed by the ESIA is that between Bourg-d'Oisans upstream and Le Péage de Vizille downstream, within the Romanche valley.

Issues have been assessed for all phases, including construction of the new project, decommissioning of the old plants, and operation of the new project. The ESIA assessed impacts of construction of the intake, new bridge, and power house on surface water, wildlife, flora and the aquatic ecosystem, and proposed mitigation measures. The social impacts of construction were assessed in terms of economic activities and employment, cultural heritage, property, transport, noise and dust. The ESIA assesses the project's operational impact on surface water in terms of hydrology, sediment transport, physical chemistry, and groundwater, and impacts on

terrestrial and aquatic flora and fauna. The long term social impact of the project is assessed in terms of employment opportunities, tax revenue, impact on infrastructure, property, cultural heritage, tourism, health, education and security.

As the decommissioning project is in the preparation phase, a number of studies are ongoing and some remain as specifications only. Key studies that have been undertaken include: soil and concrete studies for all sites, an investigation into the pollution of soil at Rioupéroux (the site of a former aluminium production site), analysis of lead and asbestos at all sites, pollution of the sediment in the Romanche, and plans for improving the site for social benefit. Studies to be undertaken in the next two years will concern a new fish pass design for Clavaux, bankside vegetation restoration, impacts of decommissioning on geomorphology, and an inventory of the local bat population. All the studies will feed into a preliminary project design document due in mid 2015.

These assessments used appropriate expertise. Some studies were undertaken by EDF staff from CIH, however most studies were carried out by external consultants. EDF drafted specifications for studies, verified the results and supervised the process.

Separate ESIA's have been undertaken for some of the project's associated facilities. EDF has funded improved connections to existing roads in places where traffic is increased by the project. The improvements were designed and built by the local authority who also undertook an environmental impact assessment so these impacts are not included in the Gavet ESIA. There will be new transmission lines installed. This is being administered as a separate project by a separate entity within EDF and consequently a separate ESIA has been undertaken.

The ESIA scopes cumulative impacts, considering the impact of existing hydropower projects and water users, and potential future water users. The ESIA concluded that the cumulative impact of the new project is moderate.

Potential impacts associated with primary suppliers were not assessed as part of the ESIA, with the exception of the impact of wastewater from the cement factory at Livet. However, environmental and social conditions on contractors are stipulated as part of EDF's procurement process, addressed in topic I-8 Procurement.

Monitoring is being undertaken during the project implementation stage appropriate to the identified issues. The general environmental monitoring plan describes the processes employed by the project to manage and monitor the management of environmental impacts. The plan defines ecological and water monitoring requirements. EDF works supervisors maintain a constant presence on site and have received training in environmental monitoring. They undertake daily checks on specific measures, for example ensuring works trucks only park on sealed areas and that the demarked area of high biodiversity forest adjacent to the construction site is not incurred upon. The flow rate from springs on the right bank of the Romanche is monitored regularly (twice a month) to ensure that the excavation work is not having an impact on these sources of potable water. The lead contractor at each site monitors waste production, noise, air, water quality, employment, and accidents. Occasional environmental and social monitoring checks will be made throughout all stages of the project by DREAL to ensure that EDF operate within the terms of their concession.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of environmental and social issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.*

Monitoring of environmental and social issues during project implementation takes into account inter-relationships amongst issues. Two members of staff, one on site, and one in CIH are responsible for collating environmental monitoring information. This allows the effects that actions in one area might have on another

to be analysed and identified. A monthly management report is compiled and circulated to CIH, UP Alpes and DPIH, covering all aspects of the construction project including the environmental and social issues. Results are discussed and the global vision of the project allows inter-relationships to be analysed.

The environmental monitoring program has shown that it can take into account new risks and opportunities that become evident during implementation. For example, site clearing identified the presence of bamboo, an invasive species. The bamboo was cleared and monitoring is now undertaken to check for its re-emergence. EDF environmental specialists maintain a 'journal of site environment' which is updated monthly with new issues to be monitored.

Criteria met: Yes

3.2.2 Management

Analysis against basic good practice

Scoring statement: *Processes are in place to ensure management of identified environmental and social issues utilising appropriate expertise (internal and external), and to meet any environmental and social commitments, relevant to the project implementation stage; plans are in place for the operation stage for ongoing environmental and social issues management; and the environmental and social impact assessment and key associated management plans are publicly disclosed.*

EDF converted contents of the ESIA, following its approval by DREAL, into a *dossier d'exécution* which sets out how the project is undertaken. The *dossier d'exécution* was reviewed by DREAL and other project stakeholders and following approval, a *prefectural decree* (permission to proceed) document was issued. Together, the *dossier d'exécution* and *prefectural decree* set out (among other things) the project's environmental and social requirements which go on to form the basis of the contractor's requirements to minimise environmental and social impact.

Processes in place to manage issues and meet commitments include:

- EDF's environmental assurance plan (EAP) to manage waste, discharge of pollutants to soil, air and water, noise reduction, the integration of the site into its surroundings, compliance with legal and contractual environmental constraints, and preservation of environmentally sensitive areas;
- Use of contracts with a specific section ('Appendix 3.5') which specifies environmental requirements;
- Checking of contractual requirements on a weekly basis, or more frequently if required, by the EDF site manager using a specific QSSE (Quality, Security, Safety, Environment) visit sheet to record findings. The visit sheets produce commitments for the contractor to take corrective action if required. The sheets are logged in EDF's central Environmental Management System (EMS) which is part of the overall electronic project management system;
- Lead contractors have a separate environmental management plan which set out how they will meet their contractual requirements;
- EDF environmental officers use protocols to deal with situations where a risk of pollution has been identified, covering, for example water monitoring across the site, procedures for loading and unloading of dumper trucks, and procedures for cleaning settling basins;
- Procedures to respond to pollution events which are regularly tested through simulated events;
- The 'triple column' document, maintained by DREAL, which lists in three columns: comments and opinions of stakeholders, response and proposals from EDF and finally opinions and comments from DREAL;
- Briefings for all new staff arriving at the site regarding environmental regulations associated with noise, dust, pollution, waste and hygiene; and
- A specific management plan for the biodiversity compensation areas of l'Île de Falcon and Pont-de-Gavet.

Monitoring and management plans for the decommissioning phase will be produced based on the decommissioning ESIA, due to be submitted in 2014. A key issue will be the monitoring of waste, given the volume of waste that will need to be removed from site. All waste will be identified, categorised, treated and documented when it leaves the site. A plan to address this will be developed.

The ESIA outlines plans for the operation stage, but these have not yet been translated into detailed environmental and social management plans for the operation stage. This work will be undertaken by EDF before the end of 2015 in partnership with DREAL who will set the operational requirements. The operational management plan will contain details of the flood management strategy, sediment flushing procedures, and daily operating regime.

The ESIA was made public during *'enquête publique'* (public inquiry) as part of the concession process. The *dossiers d'exécution* was subject to consultation with approximately 20 stakeholder organisations, including the State and ONEMA. Reviewers included some of the more critical ENGOs who were satisfied with the quality and accuracy of the document.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities; and plans and processes are embedded within an internationally recognised environmental management system which is third party verified, such as ISO 14001.*

Processes are in place to anticipate and respond to emerging risks, with the exception of cultural heritage (see I-13).

The site is inspected by EDF environmental specialists at least once a month to assess contractor compliance with their environmental requirements using a QSSE. The site inspections are discussed by the construction team at weekly meetings to identify environmental risks arising, then issues are systematically addressed in subsequent meetings. The frequency of interventions varies with the phases of work, and key areas of focus thus far have been limiting deforestation, provision for moving habitat of reptiles, establishment of warning signs, and provisions for re-vegetation and reforestation.

A comprehensive risk assessment has been undertaken for the entire project, this highlighted environmental risks of hydrocarbon and cement discharge to the river, soil pollution from machinery, noise and air pollution. The assessment is regularly updated with new risks based on ongoing monitoring. Each new phase of works requires a new *'execution procedure'*. With this document the contractor must explain to the EDF project managers how they will respond to anticipated and emerging risks.

Close and ongoing cooperation with the local community provides an effective mechanism for anticipating and responding to opportunities related to social issues (see I-7 and I-9). However there is no clear process in place for anticipating and responding to emerging environmental opportunities. In this context *'opportunities'* refers to improving pre-project issues, addressing issues beyond those directly caused by the project, or providing additional project benefits. This assessment could not identify any clear mechanism by which EDF would identify, appraise and respond to new opportunities. This is considered a **significant gap** at the best practice level.

Plans and processes are embedded within CIH's centralised environmental management system which has been ISO 14001 certified since 2002. The system and CIH were audited with a positive outcome in March 2013.

Criteria met: No

3.2.3 Stakeholder Engagement

Analysis against basic good practice

Scoring statement: *Ongoing processes are in place for stakeholders to raise issues and get feedback.*

Initial stakeholder engagement was organised by the Prefecture who appointed an independent investigator to establish and publicise that the proposed project. The investigator then organised meetings with local stakeholders to collect suggestions and opinions. This was compiled into a report for DREAL who use it as the basis of their requirements for EDF during the concession process. Project stakeholders can visit the project office at fixed times twice a week. Stakeholders can also get in contact by phone or email. There are public meetings twice a year for residents of the valley to discuss the project with EDF and other stakeholders. Further details are provided in I-1 Communications and Consultation.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, feedback on how issues raised have been taken into consideration has been thorough and timely.*

A specific staff member based in the project office is tasked with meeting and recording comments of stakeholders who visit. A visit leads to a response by phone or email, or a scheduled meeting with an appropriate member of the EDF project team.

During the assessment, one local community stakeholder interviewed stated that if they contact EDF they will usually receive a response within an hour. Another described how a complaint about noise nuisance created by blasting after 10pm was immediately addressed by EDF.

There is a record of stakeholder issues raised directly with EDF and how they have been dealt with. Issues are dealt with on a case-by-case basis, and the majority have been simple requests for information. Interviews with stakeholders have confirmed that feedback on how issues raised have been taken into consideration has been thorough and timely.

Criteria met: Yes

3.2.4 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives in the environmental and social management plans have been and are on track to be met with no major non-compliances or non-conformances, and environmental and social commitments have been or are on track to be met.*

EDF's environmental and social commitments are listed in multiple locations, including the *dossier d'exécution*, the concession permit, and numerous prefectural approvals. Many environmental commitments are built into contractors' contracts and managed through the standard contract management process but commitments are not listed and managed in a centralised location and there is no unified formal process for monitoring whether all commitments are on track to be met. This makes auditing of commitments difficult and is an area where project management has potential for improvement.

However, no major non-compliances or non-conformances were raised by any stakeholders interviewed during this assessment and all corporate-level environmental and social commitments have been or are on track to be met.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

The project has no non-compliances or non-conformances.

Criteria met: Yes

3.2.5 Outcomes

Analysis against basic good practice

Scoring statement: *Negative environmental and social impacts of the project are avoided, minimised and mitigated with no significant gaps.*

The key negative impact predicted by the EIA during implementation is the temporary loss of riparian and alluvial woodland. EDF project monitoring sheets indicate that negative environmental and social impacts of the project have been avoided, minimised and mitigated to date with no significant gaps. This is confirmed by interviews with project stakeholders.

When operating, the project is predicted to have a positive impact on the invertebrate population, fish population, and sediment transport. Positive impacts are facilitated by increased consistency in flows, large biodiversity compensation areas, improved sediment transport and ecological connectivity. EDF predict the project will have a positive impact on the community through provision of jobs and increased economic activity, a view supported by local stakeholders. Increased access and safety in the river is also seen as a positive outcome.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, negative environmental and social impacts are avoided, minimised, mitigated and compensated with no identified gaps; and enhancements to pre-project environmental or social conditions or contributions to addressing issues beyond those impacts caused by the project are achieved or are on track to be achieved.*

The project has been designed to enhance the pre-project environmental and social issues in the valley through the decommissioning of the old plants and construction of a single lower impact project. Improved river continuity by the removal of five dams can be considered an enhancement to the pre-project environmental conditions benefiting certain species of fish and allowing a more 'natural' sediment regime. Reduced impact on the landscape by the removal of existing infrastructure is also considered an enhancement by some stakeholders. The local community is currently benefiting from increased availability of jobs and associated economic activity, and will continue to benefit from improved infrastructure and economic and fiscal contributions. Negative environmental and social impacts are avoided, minimised, mitigated and compensated and no gaps have been identified by the regulator, stakeholders or independent reviewers such as FRAPNA.

Criteria met: Yes

3.2.6 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There is no process in place to identify and address emerging opportunities to improve environmental issues associated with the project.

1 significant gap

3.3 Scoring Summary

Adverse environmental and social impacts associated with the construction of the new project and decommissioning of existing projects have been thoroughly assessed. Numerous studies fed a comprehensive ESIA in addition to standalone studies by EDF, external consultants and project stakeholders. Ongoing impacts are monitored through regular site visits and inspections by EDF, and EDF manages environmental and social impacts by building the requirements of the ESIA into contractor's obligations.

Emerging risks are identified and responded to, and links with the community facilitate the identification of opportunities for enhancing social benefits. However there is no comparable process in place for identifying and responding to emerging environmental opportunities. This is considered a significant gap against the best practice management criteria.

The project design, through multiple iterations, serves to avoid and minimise environmental and social impacts and this is complemented by strong mitigation and compensation measures. The project is considered by all stakeholders to make a significant contribution to enhancing environmental and social conditions in the valley.

Topic Score: 4

3.4 Relevant Evidence

Interview:	3, 14, 15, 18, 21, 24, 31, 40,
Document:	3, 4, 5, 6, 7, 19, 25, 26, 30, 31, 32, 33, 34, 37, 46, 49, 50, 51, 52, 53, 54, 55, 56, 75, 76, 82, 83, 86, 87, 88, 89, 93, 94, 98, 100, 107, 115, 116, 118, 138, 154, 157, 158, 159, 160, 165, 166, 168, 169, 170, 174, 183, 184, 198, 201, 202, 203, 204, 210, 211, 212, 213, 214, 261
Photo:	6, 7, 8, 15

4 Integrated Project Management (I-4)

This topic addresses the developer's capacity to coordinate and manage all project components, taking into account project construction and future operation activities at all project-affected areas. The intent is that the project meets milestones across all components, delays in any component can be managed, and one component does not progress at the expense of another.

4.1 Background Information

Romanche-Gavet is managed through quality-controlled documented organisational structures within EDF and the contractors used on the project. DPIH (Hydropower Generation and Engineering Division) manages the project, with one of its five regions, UP Alpes internally contracting DPIH's Hydro Engineering Centre (CIH) to prepare and deliver the project. The national-level *Directoire* consists of the DPIH Deputy Director, a supporting officer for the DPIH Deputy Director, the UP Alpes Director, the CIH Director, a UP Alpes Project Manager, a CIH project manager for the construction project, and a CIH project manager for the decommissioning project. The COPIL provides regional-level management and consists of the UP Alpes Director, a UP Alpes Project Manager, the CIH Director, and both CIH project managers.

The construction project has progressed through an estimated 24% of works (ie. 24% of expenditure), and the decommissioning project is under preparation and is estimated to be 64% towards completion of preparation. Important interface issues include: site preparation and access to enable tunnelling and intake/dam construction to begin; completion of the construction project to allow decommissioning of the old plants to begin; compatibility of civil and electro-mechanical works on the construction project; and decisions on the conservation of some of the old plants for their heritage value. The main risks relate to delays in project execution, for example due to breakdown of tunnel-boring machinery. The potential conservation of some of the old plants poses both opportunities for cultural heritage and social benefits, as well as a risk of delay to the commencement of decommissioning in accordance with the concession requirements.

4.2 Detailed Topic Evaluation

4.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Monitoring of project progress, milestones, budget and interface issues, and of the effectiveness of management of implementation stage plans including construction management, is being undertaken on a regular basis during project implementation.*

Monitoring of all of the scoring statement's requirements is being carried out on a regular basis. Construction and decommissioning are subject to monthly COPIL meetings for monitoring progress, budgets and planning, and quarterly meetings of the *Directoire* to manage risks for implementation. Meetings are provided with information on progress, milestones and budget from the MOE project managers.

The construction project is monitored through: weekly meetings with each contractor, which are minuted through quality-controlled documents; the use of three site managers, supported by three additional supervisors, who report to the MOE construction project manager for the dam/intake, galleries, and powerhouse, using a quality-controlled report structure; and regular site visits by the MOE construction project manager to monitor construction. Detailed monitoring plans for each contractor have been prepared, and are quality-controlled, including monitoring checks and controls that are included in contractors' specifications. There is a quality-controlled civil work monitoring plan. A standardised 'Carnet de Chantier' is used to record key events and progress on site, including date, worksite, location, and description. The MOE construction

project manager prepares tables and graphs of progress of project components for submission to COPIL and the *Directoire*.

Meetings of a COVAP (Project Validation Committee; a technical review committee of CIH) and a CTSH committee at DPIH in Paris (addressing safety issues mainly) are held for studies required for the construction project.

The decommissioning project is monitored through: monthly or bimonthly minuted engineers' meetings, including the MOA project manager, MOE decommissioning project manager and engineers, addressing quality, costs, timeframe, and risks; meetings of the COVAP (Project Validation Committee; a technical review committee of CIH), which reviews studies before submission to UP Alpes (only 1 COVAP meeting to date); and reporting on a 'scoreboard document' (including hours worked, budget update, and gantt chart) to COPIL and the *Directoire*.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of the overall project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.*

The management of inter-relationships, risk and opportunities, such as those described in the 'background' above, is provided by the MOA project manager, and MOE project managers, with the direction of the COPIL and the *Directoire*. A senior member of the *Directoire* summarised the *Directoire's* role as principally one of risk management.

Criteria met: Yes

4.2.2 Management

Analysis against basic good practice

Scoring statement: *An integrated project management plan and processes are in place that take into account all project components and activities with no significant gaps; and a construction management plan is in place that describes processes that contractors and others are required to follow to manage construction related activities and risks.*

A number of plans and processes are in place, meeting the requirements of an integrated project management plan. '*Dossiers d'exécution*' are not detailed plans, but set out organisational requirements jointly for the construction and decommissioning project, and risks and interface issues. In addition, the MOA project manager has brought together all documents on an internal database, providing a process for integrated management of both construction and decommissioning projects. EDF maintains a detailed gantt chart for the entire project. Two organisational notes, for the construction and decommissioning projects separately, establish responsibilities, risks and organisational structures. The decommissioning project uses an additional technical note (*Cahier d'Expression de Besoins*). All of these documents are quality-controlled.

Both MOEs use and update an integrated project plan ie. a gantt chart for identifying and managing interfaces. Note that physical works for decommissioning are only one line in the plan at present, and will be updated as studies are completed, indicating how the plans are working documents.

Contractors on the construction project use detailed plans which the MOE-construction reviews and integrates. For example, the Alstom contract includes critical interfaces with other components / activities (for example concerning compatibility of penstocks with turbines, design interfaces on the expected hydrological flow to be used in laboratory-based hydraulic testing).

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, the plan identifies a range of potential interface issues and sets out measures to manage interface and delay issues without impinging on overall project timetables and budgets; processes are in place to anticipate and respond to emerging risks and opportunities; and construction management plans ensure that land disturbance and waste generation activities will be managed so that later rehabilitation activities can be undertaken efficiently and effectively.*

The general plans (*dossiers d'exécution* and organisational notes) set out management interfaces, though not detailed interface issues or how they are managed. The civil work monitoring plan includes mention of breakpoints and interfaces with other works. The gantt charts for both the construction and decommissioning projects seen by the assessment team imply interface issues, but they do not set out measures to manage interface and delay issues. Interface issues are managed during weekly and monthly management meetings.

The COPIL and *Directoire* provide effective processes to anticipate and respond to emerging risks, and may be used for anticipating emerging opportunities. Both the construction and decommissioning projects have developed detailed sheets on risk analysis, incorporating ranking of risks based on their likelihood and severity and the measures to be taken to reduce risks (severity is analysed according to cost, timing, quality, safety, security, environment and reputation on the construction project, while risks are categorised according to their type, eg economic, regulatory, organisational, environmental etc, for the decommissioning project). These analyses are occasionally updated, and also are quality-controlled. It is much less clear what processes are in place for anticipating and responding to opportunities, though the COPIL and *Directoire* can serve this purpose, and it is not a significant gap to date, demonstrated by responses to opportunities for social benefits.

The assessors have seen visual evidence of the management of construction to ensure efficient and effective site rehabilitation, specifically the storage of topsoil to enable its use in site rehabilitation. Plans, environmental management procedures and contractors' specifications provide a range of means by which land disturbance will be minimised, waste will be managed, and the site will be rehabilitated. These include: waste management requirements included in contractors' requirements (see I-18), measures to avoid the contamination of soil and its removal and disposal if contaminated, measures to avoid pollution of the surrounding land by run-off (drainage, sealed areas for vehicles, settling ponds), a requirement to temporarily remove and then replace France Telecom optic fibre cables running through the valley, and contractors' specifications regarding landscaping and revegetation of riverbanks and the site. Good examples are specifications that native species (which are identified in the contractors' specifications) are used in re-vegetation and that any materials imported for rehabilitation should not include invasive species (also identified by species in the specifications)..

Criteria met: Yes

4.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives in the integrated project management plan and the construction management plan have been and are on track to be met with no major non-compliances or non-conformances.*

Processes as described above and objectives in project and construction management are on track. No major non-compliances or non-conformances in project or construction management have been found by the assessment team.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

No non-compliances or non-conformances in project or construction management have been found by the assessment team.

Criteria met: Yes

4.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *The project is meeting overall budget and timing objectives and targets; interface issues are managed effectively; and construction risks are avoided, minimised and mitigated with no significant gaps.*

The project and its interface issues are successfully managed through clear responsibilities which will serve it well as it now moves into a critical phase. Construction is on time, and is within budget with the exception of unexpected costs of environmental and social measures (see I-6), and there are no significant gaps in the avoidance, minimisation or mitigation of construction risks. A good example of a measure taken to minimise risk is the use of two TBMs, minimising delays due to the risk of mechanical faults which would be severe with only one TBM.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, interface issues are anticipated, and avoided or minimised; and construction risks are avoided, minimised, mitigated and compensated with no identified gaps.*

Interface issues are anticipated as described above, and avoided or minimised through effective management. Examples provided to the assessment team were the interface between clearance and the commencement of civil works at the start of the project, delays due to cliff-protection work taking longer than expected, and snow delaying work in winter. Each of these has been managed well by EDF.

On the decommissioning project, interface issues between the studies (for example hydro analysis, site contamination, studies of geomorphology) are being actively managed to ensure delivery of a combined Preliminary Study by April 2014. There are no gaps in the avoidance, minimisation and mitigation of construction risk.

Criteria met: Yes

4.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

The project meets the requirements of basic good practice with no significant gaps.

0 significant gaps

Analysis of significant gaps against proven best practice

No evidence of whether or how contractors' plans specify the management of land disturbance or waste soil and rubble to facilitate later rehabilitation.

1 significant gap

4.3 Scoring Summary

The project has detailed structures and responsibilities to ensure it meets milestones across all components and manages delays, inter-relationships, risks and opportunities. These include structures such as the Directoire and COPIL, documents including dossier d'executions, organisational notes, internal databases and

gant charts, and processes such as weekly meetings with contractors and the use of site managers supported by additional supervisors. The project and its interface issues are successfully managed through clear responsibilities which will serve it well as it now moves into a critical phase, and construction is on time and largely within budget. There are no significant gaps in the avoidance, minimisation or mitigation of construction risks, and plans include requirements to allow effective site rehabilitation..

Topic Score: 5

4.4 Relevant Evidence

Interview:	7, 16, 22, 33, 36, 43, 44, 47
Document:	12, 13, 16, 17, 18, 23, 34, 40, 43, 44, 81, 94, 95, 98, 99, 107, 108, 109, 153, 157, 168, 169, 177, 178, 179, 180, 181, 182, 183, 205, 243, 305, 306, 307, 308, 309, 310, 311
Photo:	None

5 Infrastructure Safety (I-5)

This topic addresses management of dam and other infrastructure safety during project implementation and operation. The intent is that life, property and the environment are protected from the consequences of dam failure and other infrastructure safety risks.

5.1 Background Information

Potential infrastructure safety and public safety risks include: sudden increases in flows in the by-passed stretch of the Romanche resulting when the powerplant is required to shut down (from 4 to 45 m³/sec or more); increases in flows in this part of the river resulting from flood events; dam failure during the operation stage; coffer dam failure during the implementation stage; fire in the powerhouse during operation; naturally-occurring rockfalls and landslides along the valley; and site security during both implementation and operation.

DREAL's Risk Prevention Service regulates public safety risk. The dam is categorised as Category C (broadly speaking 5m to 10m in height) under French regulations, which requires that its design is carried out by an approved agency, and that the first impoundment is regulated and the report submitted to the prefecture. Inspection of the project by the state CTPBOH (*Comité Technique Permanent des Barrages et des Ouvrages Hydrauliques*), and a study of risks by an approved agency, submitted to the CTPBOH, are required only for larger dams and are not required for Category C.

5.2 Detailed Topic Evaluation

5.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Dam and other infrastructure safety risks relevant to project implementation and operation have been identified through an assessment process; and safety monitoring is being undertaken during the project implementation stage appropriate to the identified issues.*

The risk of sudden increases in flows in the by-passed stretch has been identified in the design process of the new project: energy dissipators will be used in case of a tripping event following a fault (electrical, mechanical or hydraulic) on the hydroelectric units. Risks of dam failure have been assessed during dam design, University of Liège studies to model the flood capacity of the dam, and its flood stability, and stability and seismic studies by a CIH team (for the latter, using the PIEZ PS 92 standard for earthquake resistance buildings). The coffer dam is designed to withstand 400 m³/sec with a 1-meter safety clearance.. The coffer dam is designed to withstand 400 m³/sec. Risks of rockfalls and landslides, and site security are identified in the *dossier d'exécution*. DREAL reviewed public safety risks during the concession process, examining flows carefully owing to strong public interest in the safety of the public using the river. Part of the ongoing studies on the decommissioning project is on public safety.

Note that the public safety risk resulting from dam failure is limited, owing to the low storage capacity of the reservoir, and failure of the coffer dam would present no public safety risk, although it is a construction and OHS risk. EDF has assessed measures to mitigate risk of fire in the underground powerhouse, but this is a risk for employees and infrastructure more than a public safety risk. Sudden increases in flows in the by-passed river stretch are the most significant public risk.

Monitoring is being carried out appropriate to the above issues, including: DREAL inspections of the dam during its construction (no specific methodology), inspections of the foundation (3 to 4 times per year), and DREAL ask BETCGB (Bureau of Technical Study and Control of Large Dams of the Ministry) to check the quality of the

foundation. Cofferdam stability is being monitored through the monitoring of water seepage and movement. Pièce 14 attached to the concession documents sets out a monitoring plan for dam safety during construction and operation. A recently produced Hydraulic Monitoring Plan sets out plans for monitoring flood risk, and the steps to be taken in the event of an emergency. This plan concerns the construction stage only, and the risks are for employees and therefore covered under I-12.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, consideration of safety issues takes into account a broad range of scenarios and both risks and opportunities.*

Consideration of infrastructure safety issues is based mainly on risks. A broad range of scenarios has been taken into account in the consideration of risk: seismic studies are based on the estimation of the maximum probable earthquake in Livet-et-Gavet; flood studies are based on the estimation of the 1000-year return period flood, based on an EDF methodology and on rain and flow rate records dating back to 1961 (Champeau station).

Consideration of the use of 'warning waves' to warn the public of sudden increases in flows concerns an opportunity to improve public safety beyond the risks of the Romanche-Gavet project itself. EDF are planning a further study to define the modalities of operation of the Romanche-Gavet in order to ensure a high level of safety especially taking into account the operation of Péage de Vizille located downstream and Grand'Maison and Saint Guillerme located upstream.

Criteria met: Yes

5.2.2 Management

Analysis against basic good practice

Scoring statement: *Processes are in place to address identified dam and other infrastructure safety issues, and to meet any safety related commitments, relevant to the project implementation stage, including providing for communication of public safety measures; a formal quality control program is in place for construction; safety management plans for the operation stage have developed in conjunction with relevant regulatory and local authorities; and emergency response plans include awareness and training programs and emergency response simulations.*

Processes relevant to the implementation stage that are in place include: cofferdam design to withstand a 400 m³/sec (10 year) flood; stabilisation of the cliffs along the valley (a measure taken for OHS reasons but with a benefit for the public); emergency response procedures for flood events; and site security measures including notices and secured fencing and gating.

Regarding communication, the above measures have been discussed with DREAL, and with some relevant authorities such as the fire and rescue services. Notices at the site perimeter alert the public to restricted access. In addition, local residents in Ponants have been informed by letter of a warning system to warn them of the imminence, start and end of blasting operations.

Quality control is carried out through the weekly checks and reports of the three site supervisors, controlling compliance with the contractors' specifications. In addition, DREAL carry out checks (described above under Assessment). DEKRA, which is an audit office in charge of the *Contrôle Technique de la Construction*, a legal framework for building construction, especially fire safety and structural reliability, will provide quality control, for example of the design of the powerhouse for earthquake resistance.

Plans for the operation stage are headlined by the use of the additional gallery and energy dissipators to allow flow to continue to the outlet in the event of an emergency shut down of the turbines. This provides a window of time for 'warning waves' to be released from the reservoir, before flows will increase to full river flow with the closing of the intake. Prior to impoundment, DREAL will confirm with EDF the plans for 'warning waves' and will require testing. Warning waves will also be used to warn of sudden release of water in the Romanche by upstream hydroelectric plants (mainly Grand Maison and Chambon) and CIH are currently studying where to locate the monitoring points and the associated decision-making processes.

Safety plans for the operation stage were discussed prior to the award of the concessions, and Pièce 16 of the concession concerns the management of water during operation, agreed with the prefecture. This concerns risks at the reservoir, in the by-passed stretch, operations during floods, normal and low water, flushing, control of debris with screening, and removal of jams in the by-passed stretch. These requirements will be finalised prior to operation. Some testing of the warning waves technique has already been carried out using an upstream dam.

During operation, a series of piezometer tubes 2.5 m below the foot of the dam will be used to monitor water pressure level and check that stability criteria are met at all times. Measures to reduce the impact of fire in the underground powerhouse are protected corridors, the ventilation system, and resistance coating for mechanical equipment providing two hours of fire resistance. EDF's group property damage programme will insure the project's assets during the operation stage, and EDF's maintenance programme, IPHE-S, will support maintenance to ensure for safety in the long term.

The studies on security being conducted for the decommissioning project are on track to deliver plans for the decommissioning, which will require restriction of access, securing the sites etc. These measures will be incorporated into each decommissioning contract.

Plans to respond in the event of fire during the construction and operation stages have been developed, and have been communicated with and approved by the fire and rescue services. A draft plan on reservoir filling has been provided to DREAL, with an associated emergency plan. There are no other emergency response plans, and these will not be required as it is a Category C dam: DREAL would require a *Plan Particulier d'Intervention* (PPI) including simulations for Category A only.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities; and public safety measures are widely communicated in a timely and accessible manner.*

There are few emerging risks and opportunities for infrastructure safety on the project. The management processes described under I-4 are sufficient to anticipate and respond to emerging risks. An example of an emerging risk that has been addressed through these processes is the risk of encountering asbestos during tunnelling. The main opportunity for public safety is to improve safety in the river which has been addressed in the design of the project (see Outcomes).

Communication with regulatory agencies on public safety issues is satisfactory. Site access restrictions are communicated satisfactorily. Blasting warning measures were communicated to every household in Ponants, in advance of the blasting beginning. In addition, communications materials on security aimed at the visiting public are readily available at the MRE.

Although EDF's SuPerHydro programme, to increase safety and performance of existing HPPs will not apply to Romanche-Gavet, it indicates how EDF would address emerging risks in the future. EDF also carries out an annual dam safety review for the entire fleet of plants in France.

Criteria met: Yes

5.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives relating to safety have been and are on track to be met with no major non-compliances or non-conformances, and safety related commitments have been or are on track to be met.*

Relevant corporate-level commitments include to maintain the highest levels of security at EDF facilities. This is met. Processes, objectives and commitments are on track to be met with no non-compliances or non-conformances. The objectives and commitments in DPIH's dam safety policy are met. Upon operation, DPIH internal safety controls will be applied, and regulations will require a monitoring report, an auscultation report, and technical visits every 5 years.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

There are no non-compliances (confirmed through discussions with DREAL) or non-conformances.

Criteria met: Yes

5.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *Safety risks have been avoided, minimised and mitigated with no significant gaps.*

Public safety risks have been avoided to date, and there have been no incidents involving the public to date. The decommissioning of the old plants and the installation of the additional gallery with energy dissipators will reduce the variability of flows in the river, and with the 'warning waves' system promises to considerably reduce risks in the valley.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *Safety risks have been avoided, minimised and mitigated; and safety issues have been addressed beyond those risks caused by the project itself.*

Risks have been avoided, as described above. Safety issues that have been addressed beyond the risks caused by the project include: cliff stabilisation, which will remain in place through operation (simulations show that they have a far higher level of protection compared to what is normally used in the valley); and improvements in road safety and access for emergency services.

In addition, the decommissioning of the decaying infrastructure of the old plants and associated facilities is a benefit for public safety, combined with the additional outlet gallery, equipped with energy dissipators, which will mitigate the potential safety impact of sudden increases in flows in the by-passed channel.

Criteria met: Yes

5.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

5.3 Scoring Summary

The public safety risk resulting from dam failure is limited, owing to the low storage capacity of the reservoir, and failure of the coffer dam would present no public safety risk, although it is a construction and OHS risk. Romanche-Gavet is a Category C project under French regulations. Sudden increases in flows in the by-passed river stretch are the most significant public risk. This was identified in the design process, and energy dissipators will be used in case of a tripping event, which will allow for flow in the by-passed stretch to be increased gradually using a 'warning waves' system. A similar system will be used to warn of sudden releases from upstream dams, contributing to improved public safety beyond the risks of Romanche-Gavet.

Appropriate monitoring is being carried out including DREAL inspections, inspections of the foundation, coffer dam monitoring, and quality control. Public safety risks have been avoided to date. The decommissioning of the old plants and the installation of the additional gallery with energy dissipators will reduce risks in the valley. In addition, cliff stabilisation provides a higher level of protection, and there will be improvements in road safety and access for emergency services.

Topic Score: 5

5.4 Relevant Evidence

Interview:	1, 3, 7, 33, 36
Document:	34, 45, 104, 110
Photo:	9, 10, 11, 12

6 Financial Viability (I-6)

This topic addresses project financial management, including funding of measures aimed at ensuring project sustainability, and the ability of the project to generate the required financial returns to meet project funding requirements. The intent is that the project is proceeding with a sound financial basis that covers all project funding requirements including social and environmental measures and commitments, financing for resettlement and livelihood enhancement, and delivery of project benefits to project-affected communities.

6.1 Background Information

The Romanche-Gavet project is fully financed by EDF's corporate finance. EDF capital investment decisions are based on investment, financing and dividend criteria, respectively: maximizing the value of the firm by investing in projects that yield a positive NPV; projects must be financed appropriately; excess cash must be returned to shareholders.

Exposure to market rates for electricity generated is low, with tariffs regulated by the French state. Decisions on investment by EDF are made at a senior level, with approval of the CECEG (*Comité des Engagements du Comité Exécutif Groupe*) required for investments over € 50 m. Revenues from the newly constructed plant, averaged over 2017 to 2070, are expected to be at least double revenues the current revenues of the plants to be decommissioned.

6.2 Detailed Topic Evaluation

6.2.1 Assessment

Analysis against basic good practice

Scoring statement: *An assessment has been undertaken of project financial viability, including project costs and revenue streams, using recognised models and including risk assessment, scenario testing and sensitivity analyses; and monitoring of the financial situation during project implementation is being undertaken on a regular basis.*

Revenue streams are based on a dedicated hydrological model developed by DTG, using daily data on inflows at Livet from 1954 to 2005, and periods of unavailability and over 50 scenarios. Operation stage costs are estimated on the basis of estimates of personnel and materials/consumables cost for operation and maintenance.

An assessment has been made of project financial viability, prior to EDF's decision to invest, based on a standard EDF excel-based model, using conventional economic analysis, incorporating operating costs and tax, capital investment cost, revenue streams until 2070, a range of discount rates, and calculation of NPV (Net Present Value) and IRR (Internal Rate of Return). The analysis has incorporated a range of scenarios, drawing on the work of a dedicated EDF team that predicts long term electricity prices using a 'global equilibrium economic model', and four main revenue scenarios reflecting fuel prices, carbon prices, and economic indicators (based on data on electricity production from thermal generation and nuclear generation, electricity demand scenarios, EU renewables forecasts, interconnections within the EU, and the potential of carbon capture and storage). The scenario analysis generates results in equilibrium prices for six points per day from 2017 to 2070. Cost is included as a factor in risk assessment of the project.

A detailed paper on the financial analysis of the project, including reference to scenarios and risks, was presented to the CECEG in October 2010. Drawing upon this analysis, the General Secretary of the EDF Group

Executive Committee approved the investment in October 2010. Scrutiny by a DPI committee is also required prior to the executive decision.

Monitoring of the financial status of the project is carried out by the MOA and MOE, reporting to the COPIL and *Directoire*.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, project costs and revenue streams are fully detailed; and financial viability of the project has been analysed and optimised including extensive scenario testing, risk assessment and sensitivity analyses.*

The model described above includes fully-detailed revenue streams. Project costs have been estimated for the construction project through detailed studies. Project costs for the decommissioning project are estimated, but are currently being fully-detailed through parallel studies and the budget will be finalised by September 2013. Pre-tendering of contracts is being used to inform the detailing of the decommissioning project. Scenario testing and risk assessment is extensive, as described above. Risks assessed include technical risks, market risks, time overruns, and the uncertain cost of decommissioning (for example by calculating the implication of a doubling of the cost of decommissioning for NPV).

Criteria met: Yes

6.2.2 Management

Analysis against basic good practice

Scoring statement: *Measures are in place for financial management of project implementation; plans are in place for financial management of the future operating hydropower facility.*

Financial management is (and will continue to be) embedded in EDF's corporate financial management system. The EDF Group's consolidated annual statements are prepared according to international accounting standards and approved by the European Union.

DPIH controls the financial performance of its project through a RPP / PPR (*Rapport de Performance du Projet* or Project Performance Report) which summarises the main budget data (total, timing and financial performance indicators), providing a synthesis of the financial and operational performance of the project in comparison to the targets set at the time of the decision to invest. The construction project's PPR is reported to the CECEG, owing to the size of the investment. The accounting system and a financial database are updated monthly to track costs and are used to generate figures for the PPR, allowing the management of cost, and the timely delivery of financial targets. DPIH also uses a mid-term plan, based on data generated from the financial management system. DPIH has a Commitments and Monitoring Committee to review financial performance, and CIH's 'Final Review Committee' reviews the budget three times per year.

Financial management of the construction project and decommissioning project is carried out separately. Reporting on costs of both the construction and decommissioning projects is included in reports to COPIL and the *Directoire*. The COPIL and *Directoire* monitor the project's financial status and reference is made to this in minutes of their meetings. Finally, the project is financially audited on an annual basis.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, financial management plans provide for well-considered contingency measures for all environmental and social mitigation plans and commitments; and processes are in place to anticipate and respond to emerging risks and opportunities.*

A contingency budget of € 6.5 m has been allocated for the entire project, for the management of cost over-runs. Financial allocations for environmental and social commitments to-date have been made through both the incorporation of environmental commitments within construction contracts, and additional budgetary allocations for environmental and social measures (for example the drinking water project, and compensation for temporary occupation of land). In addition, a percentage contingency amount is added to each budget line for unexpected risks. There are key items of environmental and social expenditure that were not budgeted but now have been added to the expected final cost, for example the cost of the biodiversity compensation measures. It is notable that it is expected that a quarter of the construction project budget is comprised of contracts with local contractors (from the southern Isère region).

Processes to respond to emerging risks and opportunities include the management processes of the COPIL and *Directoire*, the option of using the contingency budget, and insurance on physical construction risk. During implementation, insurance (procured with the assistance of EDF's Assurance team) covers all damages during construction. During operation, the risk of damage to EDF-managed property will be insured by the EDF Group property damage programme. The insurer's latest report indicates that the programme of construction work has margins (contingencies) that can be used when needed.

Criteria met: Yes

6.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives relating to financial management have been and are on track to be met with no major non-compliances or non-conformances, and funding commitments have been or are on track to be met.*

There are no non-compliances or non-conformances relating to financial management. EDF has met its funding commitments on the project to date, and there is no evidence to suggest that funding commitments will not continue to be met. EDF's Financial Risk Control Division (*Département Contrôle des Risques Financiers et Investissements*; DCRFI) control financial risks at group level by ensuring correct application of the Financial Management Framework.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

There are no non-compliances or non-conformances on financial management.

Criteria met: Yes

6.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *The project or the corporate entity to which it belongs can manage financial issues under a range of scenarios, can service its debt, and can pay for all plans and commitments including social and environmental.*

Analysis of the financial performance of the project indicates that it is financially viable under a range of scenarios, including market prices, time over-runs, increased construction cost, and increased cost of the decommissioning project. As it is corporately-financed, the project will have no debt. The project will be able to pay for all plans and commitments. Under all of the scenarios analysed, the minimum IRR is 10% and maximum is 17%.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *The project can manage financial issues under a broad range of scenarios.*

Drawing upon EDF Group's investment and the financial management procedures of the company, the project will be able to manage financial issues under a broad range of scenarios.

Criteria met: Yes

6.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

6.3 Scoring Summary

The project is proceeding on a sound financial basis that will covers all project funding requirements including social and environmental measures and commitments, and delivery of project benefits, throughout its lifetime.

Revenues are based on a dedicated hydrological model drawing from data from several decades, and a broad range of scenarios. Project costs have been estimated for the construction project through detailed studies. Project costs for the decommissioning project are estimated, but are currently being fully detailed through parallel studies and the budget will be finalised by September 2013. Contingencies are included, and there are risk management processes in place including the COPIL, *Directoire* and insurance. The decision to invest has been based on rigorous analysis, and the financial management of the project will continue using EDF's corporate financial management system including regular accounting and reporting on financial performance.

There are no significant gaps against proven best practice.

Topic Score: 5

6.4 Relevant Evidence

Interview:	7, 16, 28, 33, 36
Document:	12, 13, 14, 15, 17, 18, 99, 243
Photo:	None

7 Project Benefits (I-7)

This topic addresses the additional benefits that can arise from a hydropower project, and the sharing of benefits beyond one-time compensation payments or resettlement support for project-affected communities. The intent is that opportunities for additional benefits and benefit sharing are evaluated and implemented, in dialogue with affected communities, so that benefits are delivered to communities affected by the project.

7.1 Background Information

This topic is closely related to I-9, Project-Affected Communities and Livelihoods. This topic focuses on additional benefits delivered as a result of the project while I-9 deals specifically with the wider impacts of the project on the livelihoods and living standards of the community, especially in the Livet-Gavet municipality. “Additional benefits” means benefits that are in addition to the primary project benefits of increased energy production and a significantly reduced footprint in the Romanche valley.

The *clause social* is dealt with under this topic as a benefit to local development. Its impact on the labour force and employment is addressed under I-12 Labour and Working Conditions.

Potential benefits of the future conservation of one or more of the power plants to be decommissioned are addressed under I-13 Cultural Heritage. Potential benefits relating to the biodiversity compensation areas are addressed under I-15 Biodiversity and Invasive Species.

7.2 Detailed Topic Evaluation

7.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Opportunities to increase the development contribution of the project through additional benefits and/or benefit sharing have been assessed. In the case that commitments to additional benefits or benefit sharing have been made, monitoring is being undertaken on delivery of these commitments.*

Opportunities to increase the development contribution of the project have been assessed primarily through the consultation process. The project has committed to providing a number of benefits including: a new domestic water supply system in the municipality; provision of wood from felled trees, as fuelwood for wood stoves; a permanent bridge in the small village of Ponants, which was made permanent as opposed to a considerably much cheaper option of a temporary bridge; the MRE, which is located on municipal land and will be handed over to the municipality after construction; permanent noise mitigation outside the local school; and the *Clause sociale* which requires that 5% of work time is dedicated to underprivileged workers.

The five main benefits referred to above do not require monitoring as they are already realised. Regarding the *Clause sociale* requirement, monitoring of delivery is undertaken by contracting firms, reporting to project management on a weekly basis.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, the assessment of delivery of project benefits takes into consideration both risks and opportunities.*

The assessment focussed on the community’s expressed needs, thereby seizing key opportunities. The early execution of most of the identified benefits removes the delivery risk. As one example, the community identified an issue with the old water supply system and some springs that were threatened by construction

activities. This provided the project with an opportunity to turn a risk into an opportunity, resulting in the development of the new water supply system.

Criteria met: Yes

7.2.2 Management

Analysis against basic good practice

Scoring statement: *Measures are in place to deliver commitments by the project to additional benefits or benefit sharing; and commitments to project benefits are publicly disclosed.*

The majority of the benefits have been or are being delivered. The mechanisms for delivery have proven to function well. Note that the *Clause sociale* is not a regulatory requirement for Romanche-Gavet, as it is for other public projects, but is implemented on a voluntary basis. The *Clause sociale* is monitored and implemented in close co-operation with (and originally initiated by) the *Mission Locale*, an organisation working with support to young people aged 16-26, and the contractors.

The MRE is not yet handed over to the community, but this is governed by a specific agreement and will take place when the project comes to a close. There is also a formal agreement regarding the water supply.

EDF has committed to prioritise local employment and local sources of both goods and services. This is regularly managed (see I-8 Procurement).

In addition, increased tax revenues will accrue to the municipality, allowing for additional expenditure on local services. The project will also generate tax revenue at both departmental and national levels.

All commitments are publicly disclosed as part of general project information. Examples are: the water supply system which featured in newsletters 2, 3, 4, 5 and 8; the bridge in numbers 5, 6, 7, 8 and 9; and the MRE in numbers 5 and 7. There are also formal contracts governing these three benefits.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

Project management has provided, and will continue to provide, a process to anticipate and respond to emerging risks and opportunities, focussing on open communication with both institutions and individuals in the directly-affected community. The majority of the benefits were opportunities defined by the community, and have been successfully delivered. An example of a potential emerging risk in the delivery of the other benefits committed to is the risk of not reaching the *Clause sociale* target of 5% of hours worked by employees from four identified under-privileged groups. This risk is managed through co-operation with the *Mission Locale*, which assists in the continuous identification and referral of suitable candidates to the contractors.

In addition, there may be benefits for economic development arising from the conservation of some of the decommissioned plants, if they are conserved and made available for business or community use. This is discussed under I-13 Cultural Heritage.

Criteria met: Yes

7.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives relating to project benefits have been and are on track to be met with no major non-compliances or non-conformances, and any additional benefits or benefit sharing commitments have been or are on track to be met.*

Most identified project benefits have already been successfully delivered. The benefits that are in the process of being delivered, or will be delivered in the future, are all on track to be delivered. In addition, the project's approach to the delivery of benefits is in conformance with one of EDF's nine sustainable development commitments 'develop and sustain links with local communities where we work', and one of the eleven corporate sustainability commitments 'contribute to regional development via employment'.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

There are no non-compliances or non-conformances.

Criteria met: Yes

7.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *Communities directly affected by the development of the hydropower project have received or are on track to receive benefits.*

The directly-affected community, the municipality of Livet-Gavet, has already received benefits as a result of the project (see list under Assessment above). In addition, it is on track to receive additional benefits (the MRE, increased local tax revenue, and continued employment opportunities throughout the construction phase) in the future. More than 25% of total expenditure to date has been on contracts from the southern part of Isère, and more than 50% of hours worked to date are by employees from this region (see I-8 Procurement).

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, benefits are significant and the project has delivered or is on track to deliver significant and sustained benefits for communities affected by the project.*

The benefits are significant: the bridge in Ponants has made the village accessible to emergency services (fire trucks and ambulances), something that was previously not possible; the new water supply system replaces a very old system which would have needed replacing by the municipality soon; the MRE will respond to a strongly-expressed need in the community for a modern meeting place and has been designed with community concerns in mind.

Given the long lifespan of these measures and the tax revenue, which will be generated throughout the project's life, the project will deliver sustained benefits to the affected communities.

Criteria met: Yes

7.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

7.3 Scoring Summary

The project-affected community has participated in an early and comprehensive assessment of potential benefits. Several potential benefits have already been delivered (bridge, water supply, noise barrier and the fuelwood). The MRE has been constructed, and while it is not yet handed over to the community, meetings of community groups such as the river committee already take place there. The *Clause sociale* is operating well and delivering opportunities for underprivileged members of the work force.

Many of the benefits agreed upon were opportunities identified by the community and risks are avoided by early delivery and, in the case of the *Clause sociale*, close co-operation with a specialised agency assisting contractors in sourcing eligible candidates for employment under the clause.

The project will deliver several sustained and significant benefits to the project-affected community.

There are no significant gaps against proven best practice, resulting in a score of 5.

Topic Score: 5

7.4 Relevant Evidence

Interview:	6, 13, 30, 35, and 41
Document:	113, 265-272, 281, 283, 284, 288 and 289.
Photo:	15

8 Procurement (I-8)

This topic addresses all project-related procurement including works, goods and services. The intent is that procurement processes are equitable, transparent and accountable; support achievement of project timeline, quality and budgetary milestones; support developer and contractor environmental, social and ethical performance; and promote opportunities for local industries.

8.1 Background Information

Procurement by EDF for the project is embedded within EDF corporate procurement processes, which determines procurement procedures for ranges of contract size, and involves collaboration with EDF's AAH (*Agence Achats Hydraulique / Group Procurement for Hydropower*). Procedures are guided by French industrial law and EU-level Directives on procurement.

Procurement for the construction project has consisted of the tendering of eleven lots for various components of construction, and both the construction and decommissioning projects have procured external institutes and consultants to conduct necessary studies. The major contracts to have been procured for the construction project are: civil works for the dam and intake (a consortium led by Campenon Bernard Region, CBR); civil works for access (road construction and bridge; also led by CBR); tunnelling (consortium led by SPIE); electro-mechanical works (consortium led by Alstom); and automated control systems (COTE-SCHNEIDER).

8.2 Detailed Topic Evaluation

8.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Major supply needs, supply sources, relevant legislation and guidelines, supply chain risks and corruption risks have been identified through an assessment process; ongoing monitoring is being undertaken to monitor effectiveness of procurement plans and processes.*

Interviewees referred to a Procurement Strategy for the project, included within an 'Organisational Note', which was provided to a committee focused on procurement for EDF hydropower. EDF's Procurement Division was asked to elaborate on the procurement strategy, and the assessment included in the pre-design documents. In addition the *dossier d'exécution* included a description of the breakdown of work. Relevant French and EU legislation and guidelines are integrated into EDF's procurement processes which are followed closely. Monitoring of the procurement process is carried out by the CAH (*Committee Achats Hydro*) as described under Management, below.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, the assessment includes opportunities for local suppliers and local capacity development.*

The above assessment does not include an assessment of opportunities for local suppliers or local capacity development. However, these opportunities were assessed by the MOA, who had the role of mapping local suppliers and visiting local suppliers prior to construction. In addition, the *Politique Relations Industriel*, a French regulation on procurement, was used to help identify local suppliers.

Criteria met: Yes

8.2.2 Management

Analysis against basic good practice

Scoring statement: *Measures are in place to guide procurement of project goods, works and services and address identified issues or risks, and to meet procurement related commitments.*

A series of measures are in place to guide procurement, determined by the expected value of the works, and drawing upon French regulations and EU Directives. The MOA can authorise the procurement of contracts of less than € 20,000 in value. Above this amount, detailed measures are used, including:

- A team dedicated to procurement on the construction project (CAH, Committee Achats Hydro, encompassing CIH and AAH), with a coordinator working closely with the MOE-construction, as set out in the Organisational Note;
- The allocation of a two-person team to manage each procurement, consisting of one person from CIH and one from AAH;
- An AAH template document for planning and implementing each procurement, using which CIH works with AAH, providing technical specifications which are passed to AAH;
- Use of the *Manuel d'Ameliorisation la Securite du Enterprises*, for all suppliers, or the PRI private market rules for contracts above € 20,000;
- Use of the *Mode Operatoire Processus Achats Confies a l'AAH* for procurement between €50k and €400k, which requires that roles are defined, including the buyer, chef de pole (AAH), chef d'agence, group control, client (CIH), RSA (Procurement Strategy Responsibility), and an external control (Markets Commission and Ministry of Industry):
- Use of EDF's *Conditions Generales d'Achats* and *Regles Generales D'Achats*;
- Use of EU procedures for procurement on contracts above € 5m, for example using the EU Official Journal; and
- A web-based procurement portal, through which companies pre-qualify and tender for contract.

Processes to meet procurement-related commitments includes a formal AAH check on adherence to EDF procurement processes, and monitoring of procurement by the *Directoire*. Further details are set out under Conformance / Compliance below.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities; sustainability and anti-corruption criteria are specified in the pre-qualification screening; and anti-corruption measures are strongly emphasised in procurement planning processes.*

The *Directoire* and oversight of the AAH procurement team provide processes to anticipate and respond to emerging risks and opportunities. For example, on a national basis, AAH meets quarterly with suppliers to obtain feedback on EDF procurement.

Sustainability criteria and anti-corruption measures are paramount in procurement processes, although there is no evidence that sustainability and anti-corruption criteria have been specified in *pre-qualification* screening for this project, as required by the scoring statement. This is a gap, but is not considered significant, as the following measures are used for sustainability and anti-corruption: all AAH staff are required to sign an anticorruption declaration; use of the Guide to Environmental Requirements for [Internal and External] Suppliers, 2012; the Sustainable Development Charter Between EDF and its Suppliers (2006) attached to tender documents and contracts; and the *clause social* (requiring social insertion) attached to tender documents and contracts. The template used to guide procurement prompts environmental and waste management

requirements, and environmental requirements specific for Gavet are included in 'Pièce 3.5' attached to tender documents and contracts.

In addition, a series of processes link sustainability and anti-corruption criteria to procurement at an early stage, including: the procurement web portal requires bidders to demonstrate a required level of technical capability prior to shortlisting; EC-level tender processes include legal compliance and submission of financial audit reports as part of pre-qualification; rules on anti-corruption are disseminated to suppliers in the 'Fundamentals of Purchasing' and 'Code - Ethics of Supplier Relationships' documents; guidance from the Procurement Department on the integration of sustainability at all stages of the purchasing process, including integration of environmental and social considerations in the expression of procurement needs; and anti-corruption measures are emphasized in procurement through the use of legal and EU-level processes, and application of the policy on anti-fraud in the EDF Group established in 2010. Furthermore a memo from the procurement department in 2013 concerns the integration of sustainability into the procurement process, and the shortlisting of potential suppliers EDF is made partly on the basis of sustainability criteria.

Criteria met: Yes

8.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives relating to procurement have been and are on track to be met with no major non-compliances or non-conformances, and any procurement related commitments have been or are on track to be met.*

AAH formally checks adherence to EDF procurement policy and legal requirements, and a lawyer in the *Directoire* monitors legal compliance, raising awareness of legal requirements if necessary. No non-compliances or non-conformances have been identified through these checks. Examples of legal requirements are laws that define the role of the project owner and contractor during the phases of a project, specifying environmental and safety requirements of contractors, and the European Directive 2004/17/CE (coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors). Examples of policy commitments include the EDF Group anti-fraud policy and socially responsible subcontracting. There is no evidence that these policies and legal requirements are not met. An EDF-level agreement with its subcontractors is in place in which EDF's commitments are to provide its contractors with good visibility, to capitalise on operational experiences and transfer best practices between business lines, and to confirm its commitment to SRS (socially responsible subcontracting) by extending SRS agreements with unions. EDF appears to be in conformance with this agreement on the Romanche-Gavet project.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

There is no evidence of any non-compliances or non-conformances.

Criteria met: Yes

8.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *Procurement of works, goods and services across major project components is equitable, efficient, transparent, accountable, ethical and timely, and contracts are progressing or have been concluded within budget or that changes on contracts are clearly justifiable.*

Discussions with interviewees confirm that the procurement processes to date have been fair and open, and that they follow clear and consistent procedures. Major suppliers appear satisfied with the transparency of procedures and use of the web portal for making procurement decisions clear. Ethical requirements including sustainability and anti-corruption requirements are applied, including attachment of environmental and social provisions to contracts and adherence to legal environmental and safety requirements by contractors. Contracts have been procured on a timely basis and within budget. Major suppliers apply their own environmental, social and safety policies, and all are certified to ISO 14001. Contractors broadly agree that EDF is highly demanding in its technical and sustainability requirements whilst being commercially responsible. The relationship with the electro-mechanical contractor is strong, with an agreement to manage Gavet as a model site.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, opportunities for local suppliers including initiatives for local capacity development have been delivered or are on track to be delivered.*

Opportunities for local suppliers have been delivered, with a series of smaller contracts won by local suppliers, and a high proportion of local suppliers winning sub-contracts within the major civil works contracts. EDF calculate that 24% of project expenditure to date has been on locally-supplied works and services (though this is expected to reduce as major works continue, especially the electro-mechanical works) and can readily provide an analysis demonstrating this calculation. The social clause which requires 5% of the workforce to be the socially-excluded is a commendable initiative which can contribute to the development of local capacity.

Criteria met: Yes

8.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

8.3 Scoring Summary

An assessment of procurement needs is set out in more than one document including a procurement strategy, pre-design documents, and the *dossier d'exécution*. A series of measures are in place to guide procurement, determined by the expected value of the works, and drawing upon French regulations and EU Directives. Sustainability and anti-corruption measures are strongly emphasised in procurement processes, and monitoring is carried out by a committee and close involvement of the Group Procurement Department. Procurement processes to date have been fair and open, and follow clear and consistent procedures, with procurement on time and within budget, and opportunities for local suppliers and the socially-excluded have been significant.

Topic Score: 5

8.4 Relevant Evidence

Interview:	5, 7, 36, 40, 43, 47
Document:	25, 37, 38, 39, 46, 139, 165, 175, 193, 243, 292, 293, 294, 295
Photo:	None

9 Project-Affected Communities and Livelihoods

(I-9)

This topic addresses impacts of the project on project-affected communities, in relation to economic displacement, impacts on livelihoods and living standards, and impacts to rights, risks and opportunities of those affected by the project. The intent is that livelihoods and living standards impacted by the project are improved relative to pre-project conditions for project-affected communities with the aim of self-sufficiency in the long-term, and that commitments to project-affected communities are fully delivered.

9.1 Background Information

Adverse effects of the Romanche-Gavet project on project-affected communities are minor and there is overwhelming support for the project in the directly-affected community.

This topic is closely related to I-7, Project Benefits. I-9 focuses on the wider impacts of the project on the livelihoods and living standards of the community, especially in the Livet-Gavet municipality, while I-7 deals with specific additional benefits from the project. Where this topic addresses stakeholder engagement and support, it is in relation to the directly-affected community and their livelihoods. Wider issues of communication and engagement with all stakeholders are covered in I-1 Communications and Consultation. Potential benefits from conservation of the heritage of the plants to be decommissioned is addressed in I-13 Cultural Heritage.

9.2 Detailed Topic Evaluation

9.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Issues relating to project-affected communities have been identified through an assessment process utilising local knowledge; and monitoring of project impacts and effectiveness of management measures is being undertaken during project implementation appropriate to the identified issues.*

Issues relating to project-affected communities have been identified in close co-operation with the community itself, as a part of impact assessment and consultations, including both the regulatory consultation and the ongoing EDF-led communication and consultation.

The key issues for the project-affected community have been assessed as: a) for the new project, the management of traffic and noise; employment opportunities; impacts on property; and the provision of benefits; and b) for the decommissioning project, management of traffic and noise; and cultural heritage. Impact assessment studies are ongoing for the decommissioning project and the preparation of management, mitigation and monitoring documentation has begun.

The most important ongoing issues during the construction phase are identified as traffic and construction noise. This is monitored by contractors and EDF, and both have proven responsive when the community has brought issues to their attention. The monitoring of employment issues and the provision of benefits is described under I-12 and I-7 respectively, and property purchases have been finalised, requiring no further monitoring.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of project-affected communities issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.*

There are no identified inter-relationships which would cause adverse impacts on livelihoods or living standards.

Inter-relationships which may deliver positive impacts concern the links between decommissioning, access to the river for recreation (fishing, swimming), the potential conservation of some of the old infrastructure for heritage purposes or economic uses, and restoration of the river's ecological continuity. These are discussed in I-7, I-13, and I-15. These relationships are factored into ongoing monitoring and also into the assessment work for the decommissioning studies. Please refer to specific topics, such as I-13 and I-15 for specific details.

No actual risks or opportunities have so far become evident during implementation, but the close relationship between the project and the community facilitates early identification of emerging issues and potential opportunities.

Criteria met: Yes

9.2.2 Management

Analysis against basic good practice

Scoring statement: *Measures are in place to address identified issues that affect project-affected communities, and to meet commitments made to address these issues; and if there are any formal agreements with project-affected communities these are publicly disclosed.*

Adaptive management measures in the form of changes to truck routes, hours of particularly noisy work etc., have been implemented following discussions with the community. Many of the issues identified as important have been resolved to the satisfaction of the affected community.

The community relations function of EDF, based at the MRE, is in charge of managing the identified issues, communication and consultation with the affected community and monitoring the delivery of commitments.

The formal agreements made in relation to the project-affected community are described in I-7. They have been publicly announced through the newsletters listed in I-7, and are publicly disclosed at the municipality.

.Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

The close relationship between the project and the community and the municipal leadership is a strong process for the identification of emerging issues and developing opportunities.

As described in I-7, many key risks and opportunities are already internalised into project management, given that a clear majority of the additional benefits are opportunities defined by the community, and already successfully delivered.

The decommissioning project has a monitoring committee with broad membership (DREAL as regulator is included), which meets about three times per year. The objective is to continuously validate choices for management and monitoring. The definition of management and monitoring plans is on track.

There is a gap in the management of risk that is related to benefits from the conservation of cultural heritage. Please refer to I-13 for full details.

9.2.3 Stakeholder Engagement

Analysis against basic good practice

Scoring statement: *Ongoing processes are in place for project-affected communities to raise issues and get feedback.*

The main process for project-affected communities to raise issues and receive feedback is the regular (twice weekly, Wednesdays 9.00 to 13.00 and Fridays 13.00 to 17.00) public opening hours of the MRE, in combination with the log book for filing complaints. The log book notes the question/complaint filed, together with the response and date for closure of issue.

Feedback is also given through the newsletter, published quarterly since early 2009, and the regularly scheduled public meetings (two per year, plus additional meetings for special topics). Invitations and information regarding all public activities is sent out via fliers delivered to all households in the municipality, posters at the town hall and tourist office, and advertisements in the press and in the newsletter.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, feedback on how issues raised are taken into consideration is thorough and timely, and project-affected communities have been involved in decision-making around relevant issues and options.*

Feedback is provided on a regular basis, both directly to stakeholders who have raised issues, and generally through for example the newsletter on issues of wider relevance. Interviewees agree that this feedback has been both thorough and timely. The number of visitors to the MRE is decreasing in 2013 as compared to 2012, an indication that stakeholders feel well informed and satisfied with the way the project has responded to issues raised.

Most of the key benefits delivered by the project (see I-7) have been identified by the community, and they have been involved in related decision-making. For example, the architect that designed the MRE was worked in co-operation with EDF and the community, in order to optimise its usefulness to the community when it is handed over to the municipality. A further example is the close involvement of the municipality in decision-making on potential commercial uses for the decommissioned plants with heritage value.

Criteria met: Yes

9.2.4 Stakeholder Support

Analysis against basic good practice

Scoring statement: *Affected communities generally support or have no major ongoing opposition to the plans for the issues that specifically affect their community.*

The community express support for the plans that specifically affect their community. There are no dissenting voices at all, and several interviewees from the project-affected community attest to the ubiquitous support for the project.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, formal agreements with nearly all the directly affected communities have been reached for the mitigation, management and compensation measures relating to their communities.*

The issues that were identified as important by the directly-affected community of Livet-Gavet municipality were employment, impacts on property, the provision of benefits, the conservation of some of the existing power plants and the management of traffic and noise.

It would not be legal to promote local employment by quotas, so there can be no formal agreements on this issue. Properties have been bought and sold at market prices with individual sales contracts. Most of the defined and desired benefits have already been delivered (see I-7) and some of them are delivered under contractual arrangements, for example the bridge, the water supply and the MRE. Plans for the management of traffic and noise were agreed with the municipality and made publicly available.

Criteria met: Yes

9.2.5 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives relating to project affected communities issues have been and are on track to be met with no major non-compliances or non-conformances, and commitments have been or are on track to be met.*

All relevant objectives have been, and are, on track to be met with no major non-compliances or non-conformances, and commitments have been or are on track to be met.

The most relevant of EDF's corporate responsibility commitments are: transparency in dialogue; contribution to regional development via employment; and preservation of water resources. The Romanche-Gavet project shows no non-conformances with these commitments. The corporate strategy details 9 commitments, out of which two are significant under this topic: "develop and sustain links with local communities where we work" and "reduce our environmental impact especially on biodiversity". The project is in in conformance with both of these.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

There are no non-compliances or non-conformances.

Criteria met: Yes

9.2.6 Outcomes

Analysis against basic good practice

Scoring statement: *Livelihoods and living standards impacted by the project have been or are on track to be improved, and economic displacement is fairly compensated, preferably through provision of comparable goods, property or services.*

The project does not significantly adversely affect the livelihoods or living standards of any residents in the project-affected community. Economic displacement has been avoided by the voluntary sale of land at market rates. Those whose livelihoods and living standards are affected have benefitted, in terms of either employment or business opportunities created by the project.

Negative project impacts are temporary and the interviewees from the community express conviction that there will be no residual negative impacts once construction is completed, and only the benefits will remain.

Some residents were worried that they would have their land expropriated (EDF has the legal instrument to do this via the concession), but all properties required for the project have been purchased through an established agreed formula, at market prices.

Local employment in the project presently stands as high, at 25%, which is a significant contribution in an area with high unemployment rates.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, the measures put in place to improve livelihoods and living standards are on track to promote self-sufficiency in the long-term.*

The principal measures in place to improve livelihoods and living standards in the affected communities are: a high level of employees from the local area, the *Clause sociale* requiring a minimum of 5% of the workforce to be from disadvantaged groups; the procurement of local businesses to deliver some components of the work; improved water supply; improved recreational access to the river; improved fish populations; and improved road and bridge access. Employment and the use of local businesses delivers benefits for the employees and businesses concerned for the duration of construction and decommissioning work, and may deliver longer-term benefits through improved skills and increased chances of subsequent employment (particularly for disadvantaged groups).

There is no possibility of the community being dependent on the measures taken by the project for their livelihoods and living standards, in the sense implied by ‘self-sufficiency’ in the scoring statement.

Criteria met: Yes

9.2.7 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

9.3 Scoring Summary

The community has played an active role in assessing the issues of importance. The project-affected community generally considers that the project brings significant positive impacts. Opportunities for employment, improved recreational access to the river, and conservation of cultural heritage etc will provide sustained positive impacts to the directly-affected community. Follow-up of issues focuses on the delivery of benefits as well as monitoring traffic nuisance and noise levels.

The community use their ability to easily contact project staff to raise issues and receive timely feedback. The community is strongly supportive of the project.

Livelihoods and living standards will not be greatly affected for most people in the community. Those who have secured jobs, or run a business that profits from the influx of construction workers and other project-related visitors have experienced a rise in incomes, although this may not be permanent.

Livelihoods and living standards in the affected community are likely to improve relative to the pre-project mainly as a result of economic development resulting from improved environmental conditions, the opportunity to use the river for recreation, and the benefits set out in more detail in I-7.

There are no significant gaps against proven best practice, resulting in a score of 5.

Topic Score: 5

9.4 Relevant Evidence

Interview:	6, 13, 30, 35, 41
Document:	32, 33, 50-56, 113, 115-117, 265-272, 281, 283, 284, 288, 289.
Photo:	13, 15

10 Resettlement (I-10)

This topic addresses physical displacement arising from a hydropower project development. The intent is that the dignity and human rights of those physically displaced are respected; that these matters are dealt with in a fair and equitable manner; that livelihoods and standards of living for resettles and host communities are improved; and that commitments made to resettles are fully delivered.

This topic is Not Relevant in the case of Romanche-Gavet, because the project has not and will not require any physical displacement.

11 Indigenous Peoples (I-11)

This topic addresses the rights, risks and opportunities of indigenous peoples with respect to the project, recognising that as social groups with identities distinct from dominant groups in national societies, they are often the most marginalized and vulnerable segments of the population. The intent is that the project respects the dignity, human rights, aspirations, culture, lands, knowledge, practices and natural resource-based livelihoods of indigenous peoples in an ongoing manner throughout the project life.

This topic is Not Relevant in the case of Romanche-Gavet, because the project will not affect any peoples that meet the definition of Indigenous Peoples.

12 Labour and Working Conditions (I-12)

This topic addresses labour and working conditions, including employee and contractor opportunity, equity, diversity, health and safety. The intent is that workers are treated fairly and protected.

12.1 Background Information

The construction project is implemented through contractors and divided in two main civil engineering lots: underground work carried out by a consortium of SPIE, Sotrabas, Campenon Bernard and Chantier Modernes; and inlet structures carried out by a consortium of Campenon Bernard, Coffex, Botte, Tournaud and Vinci TP. Alstom Spain is the electro-mechanical contractor for the units (turbines and generators) and it is using Alstom China and Alstom India to manufacture the equipment. Site workers are employed directly by each company. Safety aspects are overseen by a specialist company, APAVE (a separate safety co-ordinator is a legal requirement in France when more than three contractors work at the same site).

Where this topic concerns stakeholder engagement it is related to labour and working conditions only. Wider stakeholder issues are covered in I-1 Communications and Consultation. The *clause social* (see below) is addressed here as an opportunity related to labour and human resources management, whilst I-7 (Project Benefits) addresses the additional benefits of the *clause sociale* for the local community and region.

A fatal accident has occurred at the construction site. The accident happened during unloading operations and is presently under formal public investigation.

12.2 Detailed Topic Evaluation

12.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Human resources and labour management requirements have been identified through an assessment process, including occupational health and safety (OH&S) issues and risks; and processes are in place to identify any emerging or ongoing issues, and to monitor if management measures are effective.*

In an assessment of human resources carried out by EDF it was estimated that there would be a need for 250 full-time-equivalent staff, or 32,000 working hours per month (at the maximum level of activity). EDF shared its human resources needs assessment with contractors as a part of tender documentation, but it is not meant as a specification, rather as an estimation on which to base a tender. Contractors work with a fixed price, which means that they ultimately assess and determine how many employees they use for the construction work.

Contractors mainly use their long-term employees on the project, and use a forecasting system to determine which of their staff will work where and when. Annual evaluations review employees' priorities, and planning for the manning of a particular site/contract is completed on this basis. Some employees on the project are able to live at home, and commute daily.

Workers' rights are regulated in the French labour legislation and the contractors are required, as part of the contract, to follow the law. EDF has prepared a "Safety Management Plan" in which it is required that contractors follow labour legislation. EDF also includes a *clause sociale* in its contracts (see below under Management).. No other specific requirements for the construction activities have been identified and listed in the "Safety Management Plan".

In the case of the fatal accident at the working site, DREAL is investigating whether the company has complied with the law. The police are involved and an Occupational Health Committee also performed an investigation

and interviewed persons at the site. The result of the DREAL investigation will be compiled into a report which is not yet finalised.

A variety of processes at different levels are ongoing to identify emerging or ongoing issues and opportunities for labour management (see Management below) and to monitor if management measures are effective.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, the assessment takes broad considerations into account, and both risks and opportunities.*

Risks and opportunities are regularly reassessed by CISSCT (*Collèges Interentreprises de Sécurité, de Santé et des Conditions de Travail*), APAVE, EDF itself and DREAL for example. The many different actors, internal and external, guarantee a broad approach to the data collected and issues reviewed.

Contractors monitor time lost due to injuries. The data is clearly displayed at the site and accompanied by a good-practice document addressing potential risks and providing opportunities for improved safety behaviour.

Criteria met: Yes

12.2.2 Management

Analysis against basic good practice

Scoring statement: *Human resource and labour management policies, plans and processes are in place that address all labour management planning components, including those of contractors, subcontractors, and intermediaries, with no significant gaps.*

The main processes that are in place are part of the health and safety management system regulated by law. Décret 94 governs the implementation of OH&S coordination, because several companies are contracted for the Romanche-Gavet project and it is a construction project. This means that the project owner is required to have an OH&S coordinator, and that specific OH&S plans have to be prepared by contractors, and health and safety issues shall be recorded in logs..

EDF has prepared a “Safety Monitoring Plan” and has contracted a full-time on-site independent coordinator of safety issues (APAVE). This plan, prepared in 2013, includes the organisation of safety management, communication, reporting, training, control and operational risks in OH&S. APAVE adapted the Safety Monitoring Plan in order to facilitate monitoring in accordance with the labour legislation. Each contractor has prepared its own OH&S plans adapted to site-specific construction activities and has its own OH&S-responsible person checking, for example, that Personal Protective Equipment is used and that no dangerous activities are ongoing.

EDF’s QHSE Manager has the overall responsibility over OH&S issues and works in close cooperation with the CISSCT and APAVE. The safety “passport”, developed by the CISSCT, is a tool which supports training and awareness in safety. Outside visitors are all given a presentation on the passport before they are allowed to enter the site.

There is a tag system used to monitor the number of people present in certain high-risk areas (for example tunnels, see photo 14).

The HR policy of one of the contractors specifies the use of their long-term staff as far as possible, and they never subcontract tasks for which they have internal capacity. Interviewees from several contractors indicate that a similar policy is in place with all contractors.

There is a special company involved in the assessment of OH&S and its management: the *Service de Sante au Travail*. It conducts pre-hiring health check-ups and regular visits to the site (see photo 26). They handle only the permanent employees of the contractors, whilst temporary employees are handled by another entity responsible for this category of worker.

An infrastructure safety inspector for hydropower at DREAL carries out regular safety inspections according to the French labour legislation (*Convention no 81 de l'Organisation internationale du travail sur l'Inspection du travail*, 1947). The inspections of the construction site have not revealed any issues to date.

Emergency evacuation plans are developed and an evacuation exercise has been carried out. When the tunnelling approaches the shaft sections, this work will be intensified further.

A charter for sustainable development between EDF and its suppliers is attached to contracts. According to the special terms and conditions of purchase, contractors have to recognise and attest to the implementation of the charter, and agree on the mechanisms and human resources required to guarantee its application.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

Regarding OH&S, the safety monitoring plan sets out processes for management responses in the case of identified issues. In addition, APAVE conducts daily inspections of safety on the site and keeps a register of issues. The contractor in question must respond quickly with a suggested solution and a time by which the issue will be dealt with. In the case of an immediate risk of injury, the inspector can stop work at the site in order for the condition to be addressed. Ongoing daily monitoring pays particular attention to inter-relationships between risks.

The CISSCT has been created, and has representation from EDF, the safety coordinator (APAVE), contractors, workers, DREAL etc., in order to identify safety issues and find solutions to them. This committee also functions as a general purpose mechanism for the interface between the different actors at site, but the consortia have their own weekly internal safety coordination meetings as well.

EDF implements a special clause (*clause sociale*), included in contracts, which require the contractors to reserve a minimum of 5% of the total working time for underprivileged workers. The clause is voluntary for EDF, see further under I-7. The individuals who qualify for this clause can be either long-term unemployed, beneficiaries of the minimum integration allowance (meaning they have lost the higher level of unemployment benefits); disabled workers recognised as such by the COTOREP organisation (*Commission Technique d'Orientation et de Reclassement Professionnel*); or young people with a low level of education or who have never worked. The contractors' commitment to follow the social clause can be implemented by sub-contracting with a social integrity company; work with an external organisation that provides integration employees for the duration of the contract or direct hiring of jobseekers or recruitment of young people. EDF monitors the clause's implementation on a weekly basis.

The social clause is in place through the local Employment Agency that provides information, training and help to employment seekers. Local unemployed persons can leave their CVs with the local Employment Agency and if any of the contractors need to employ people under the clause, they can contact the agency. The compliance of the clause is followed up by EDF through the contractors' regular reporting. The local Employment Agency also follows up how many persons that are recruited for the project.

The contractors' forecasting systems are used to manage any emerging risks in regards to staff turnover rates. Interviewees attest that there are no problems with high staff turnover rates in the contracted companies. One interviewee gave the number of 5% turnover on an annual basis, a third of which is retirement, another third is

voluntary change of employment and the remaining third is people who are dismissed by the employer for various reasons.

Criteria met: Yes

12.2.3 Stakeholder Engagement

Analysis against basic good practice

Scoring statement: *Ongoing processes are in place for employees and contractors to raise human resources and labour management issues and get feedback.*

Processes to raise human resources and labour management issues focuses on solutions that are internal to the company. The workers first talk to their immediate manager in order to raise an issue, and possibly the next level of manager if there are reasons not to go to the immediate manager, or because no resolution has been reached on a given issue. The issues raised are normally resolved within a week according to interviewees.

Safety issues are recorded in a log and followed up by the weekly safety meetings.

Quarterly CISSCT meetings begin with a site visit in which the representatives raise issues that are discussed during the meeting. Necessary actions are agreed upon, together with a schedule for implementation. Unions are well represented at site, and the workers can easily contact their representative. The union representative is knowledgeable regarding workers' rights legislation and will be able to advise and support in case of an emerging issue.

EDF has a whistle-blowing mechanism in place but there is no evidence that this has been used in practice in connection with issues concerning labour and working conditions in the project. The contractors use their own complaints registers, where individuals can register issues without giving their names. This function is used, but the main process for raising issues is direct recourse to supervisors and managers.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, feedback on how issues raised have been taken into consideration has been thorough and timely.*

The CISSCT is the main formal feedback mechanism. On a more frequent and informal basis, interviewees attest to thorough and timely feedback from their managers on issues raised.

The fatal accident that took place on the site resulted in an investigation, which is ongoing as mentioned above, and corrective actions. A special-purpose loading platform has been constructed to alleviate future risks during loading (see photo 16).

Criteria met: Yes

12.2.4 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives relating to human resource and labour management have been and are on track to be met with no major non-compliances or non-conformances, and any labour related commitments have been or are on track to be met.*

EDF has a corporate-level commitment to abide by the major ILO conventions as well as the UN Global Compact. It also commits to being "a responsible employer", a commitment that is defined as relating to the

reduction of workplace accidents, preserving excellence through training and promoting diversity and zero tolerance of human-rights violations, fraud or corruption, commitments which extend to suppliers.

No major non-compliances or non-conformances are identified, and labour-related commitments have been and are met.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

There is one outstanding worker’s complaint registered at the site. This concerns a worker who considers himself assigned to the wrong type of work. This is not an issue of compliance or conformance, and is not considered a gap against the scoring statement.

There is no auditing of contractors and suppliers regarding their compliance with the requirements specified in the Sustainable Development Charter. This is a **significant gap** further described and scored under Outcomes below.

Criteria met: Yes

12.2.5 Outcomes

Analysis against basic good practice

Scoring statement: *There are no identified inconsistencies of labour management policies, plans and practices with internationally recognised labour rights.*

In accordance with its CSR commitments, EDF commits to comply with the fundamental principles and rights contained in the United Nations Declaration of Human Rights, the United Nations Global Compact, the European Union Charter of Fundamental Rights and the Conventions signed under the aegis of the International Labor Organization, ILO. EDF applies these fundamental principles and rights to its purchasing processes, in particular those related to child labour and to forced or mandatory labour.

In this context, EDF has drafted a “Charter for Sustainable Development between EDF and its Suppliers”, and this document is part of the Contract. EDF reserves the right to verify that contractors, sub-contractors and suppliers are not in contradiction with these principles, these rights and the charter.

DREAL, as the regulator, regularly monitors compliance with French law, which is in line with internationally recognised labour rights.

There are no identified inconsistencies of labour management policies, plans and practices.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, labour management policies, plans and practices are demonstrated to be consistent with internationally recognised labour rights.*

Relevant policies, plans and practices are not specifically demonstrated, for example through a separate analysis, to be consistent with internationally recognised labour rights.

The main project component is fully legally compliant in a jurisdiction that has put into force all relevant international conventions² and EDF requires subcontractors and suppliers to comply with these. EDF is a

² France has put into force all of the ILO ‘fundamental’ conventions and the UN Convention on the Rights of the Child, referred to in the IFC Performance Standard (2) on Labour and Working Conditions.

signatory to the UN Global Compact and requires its subcontractors and suppliers to meet the principles of the Global Compact. Adherence to these principles is a corporate-level commitment of EDF. However, in this context it is of importance that one significant contract, the electro-mechanical one for the generating units, will utilise manufacturers located in China and India, jurisdictions that have not signed all fundamental ILO conventions (both have signed only 4 out of 8). The lack of demonstrated evidence that labour and working conditions on the project components that are implemented in these jurisdictions are consistent with internationally-recognised labour rights and EDF's commitments is a **significant gap** against this scoring statement.

Criteria met: No

12.2.6 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

The lack of demonstrated evidence that contractors' and suppliers' practices are consistent with internationally-recognised labour rights and EDF's commitments.

1 significant gap

12.3 Scoring Summary

EDF conducted a preliminary assessment of human resources which was shared with contractors as part of tender documentation. Occupational health is handled by a special-purpose company with doctors conducting regular on-site inspection visits and emergency exercises.

In order to secure employment of local under-privileged workers, EDF implemented a voluntary requirement that requires the contractors to reserve 5% of the total working time for this group. The benefit is partly delivered in co-operation with a local employment agency.

A monitoring plan, prepared in 2013, includes management responses in the case of identified safety issues. Supervision is carried out by multiple external and regulatory agencies on both safety and labour issues, and risks and opportunities are regularly monitored by inspections at different levels and with different frequencies, including daily inspections carried out by APAVE. They also keep an issues register and follow up to ensure that identified issues are resolved quickly and in an appropriate manner.

A CISSCT committee meets quarterly and is responsible for conducting safety rounds and provide a management vehicle for inter-company issues relating to OH&S, and working conditions. Contractors have weekly safety meetings with all staff.

Processes, including complaints' registers, to raise human resources and labour management issues and get feedback are in place and focus on company-internal solutions in which workers would talk to their immediate manager in the first place. Feedback is taking place at both formal and informal levels, and is thorough and timely.

However, it is not demonstrated that contractors' and suppliers' practices in countries other than France are consistent with internationally-recognised labour rights and EDF's commitments.

There is one significant gap against proven best practice, resulting in a score of 4.

Topic Score: 4

12.4 Relevant Evidence

Interview:	2, 12, 20, 25, 26, 32, 39, 40, 44, 45, and 47
Document:	1, 31, 34, 41, 42, 46, 104, 120-123, 126, 128, 130 and 172-173.
Photo:	14, 16, 17, 26 and 27

13 Cultural Heritage (I-13)

This topic addresses cultural heritage, with specific reference to physical cultural resources, associated with the hydropower facility. The intent is that physical cultural resources are identified, their importance is understood, and measures are in place to address those identified to be of high importance.

13.1 Background Information

Physical cultural resources in the Romanche valley are: the industrial heritage of the six plants to be decommissioned and their associated water transport infrastructure and transmission lines; the 'Keller House'; and remains of a hydroelectricity plant at Gavet. Therefore the decommissioning project has direct implications for the conservation of the potential heritage value of the plants. The construction project will not have any impacts on cultural heritage.

The French state is the owner of the plants. It is important to understand that EDF does not have any legal obligation to ensure their conservation, and is subject to the requirements of the concession to dismantle the plants and their associated infrastructure and return the river fully to nature.

Livet consists of two parts, two older buildings built over 1898-1902 (Livet I), and a structure built in 1904 (Livet II) which is built of concrete and steel, in an industrial design which is rarely found in the region, and which is depicted in a stained glass window in Livet church. The Les Vernes plant (1917) and the Keller House were built by the entrepreneur Charles Albert Keller, who pioneered calcium carbide production and hydropower in the Romanche valley. Les Vernes is of neoclassical design, and encompasses a stairway to the adjacent entrance based on the architecture of nearby Château de Vizilles, and the original penstocks and machinery. Les Vernes was classified by the French state in 1994, upon EDF's request (at that time EDF owned the plants). Les Vernes and its penstocks also have a Department d'Isère heritage label (as do the Keller House and the church at Livet). None of the other plants have the distinctive architecture of Livet II or Les Vernes. Les Roberts and Riouperoux are typical of plants built at the time, and Les Clavaux and Pierre Eybesse are not considered to have architectural value or are beyond repair.

The industrial heritage of the valley, encompassing hydropower, metallurgical industries, and the cultural mixing that arose as a result of the industry, and the valley's position as the Gate de l'Oisans and a passage to Italy, is of value in its own right, and as a means of encouraging greater tourism in the valley. The valley is also linked to the *houille blanche* of the Grenoble region ('white coal', a phrase referring to the energy of hydrological resources coined at the end of the 19th century). In response there have been proposals of varying ambition for the conservation of the valley's industrial heritage.

There is a small museum and library in Riouperoux focused on the geology and industrial history of the Romanche. EDF's Hydrelec Museum is nearby, located by the Grand Maison reservoir.

ABF (*Architecte des Bâtiments de France*) is an agency of the French Ministry of Culture (Isère Regional Directorate) with statutory powers for the conservation of buildings and an advisory function. They have no statutory powers over the Romanche plants, but are involved in advising on the architectural value of the plants and associated facilities. The *Conseil Général Service du Patrimoine Culturel* also has an advisory function, for example advising the Prefecture on the classification of heritage sites.

13.2 Detailed Topic Evaluation

13.2.1 Assessment

Analysis against basic good practice

Scoring statement: Cultural heritage issues, with respect to physical cultural resources, that are relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.

Prior to the project, the Association of Industrial Heritage of Dauphiné prepared documentation on the plants to be decommissioned in 1996. An assessment of the heritage of the valley and project impact on heritage was included in the ESIA of 1999. A more detailed assessment of the architectural value of the buildings and associated facilities was carried out in 2007. EDF commissioned a detailed assessment of the measures required to preserve Les Vernes, reporting in 2011. The Romanche plants are also mentioned in an inventory of hydro stations with heritage value in the Alps (financed by EDF; *Alpes Electrique – Paysage de la Houille Blanche*, 2011). All stakeholders interviewed agreed that heritage has been adequately assessed.

These studies have used appropriate expertise: the study of architectural value was jointly authored by the *Conseil Général Service du Patrimoine Culturel*, EDF Hydrelec Mueum and an architectural student. Monitoring of impacts is not required at this stage, as decommissioning is yet to begin.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: In addition, monitoring of cultural heritage issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.

The conservation of the plants' cultural heritage and the economic contribution that this heritage could make in combination with the new Romanche-Gavet project, is related to planning for the sustainable economic development of the valley. However the conservation of the plants and their associated infrastructure may conflict with the ecological restoration of the river and visual amenity which also may bring economic benefits. These inter-relationships underlie the challenge of finding the correct balance of conservation of the heritage with decommissioning, on an economically-sustainable basis. EDF commissioned a study by *Architectures Éco-créatives Espace Gaia* on options for redevelopment of the valley (the 'Espace Gaia' study), carried out in 2012, which sought to establish local communities' and stakeholders' requirements so that economically-sustainable uses could be found. (*Architectures Éco-créatives Espace Gaia* is an architectural firm). This study meets this scoring statement's requirement to identify opportunities. EDF, CG38, DREAL and all local stakeholders are highly aware of these inter-relationships and the assessors are confident they will remain attentive to emerging risks and opportunities as decommissioning takes place.

Criteria met: Yes

13.2.2 Management

Analysis against basic good practice

Scoring statement: Processes are in place to ensure management of identified cultural heritage issues, and to meet commitments, relevant to the project implementation stage; plans are in place for the operation stage for ongoing cultural heritage issues management.

The assessment of the architectural value of the buildings and associated facilities carried out in 2007 recommended that the following are conserved for heritage purposes: Livet I and II (buildings but not machinery) and associated water transfer structures and transmission lines; Les Vernes water intake; Les Vernes powerplant including machinery and associated infrastructure; les Roberts (with or without machinery) and associated structures; ancillary infrastructure from Les Roberts to les Clavaux; the Riouperoux water intake; and the remains of the additional plant at Gavet. It suggests that the following are conserved if desired, but it is not of as high importance: infrastructure between Pont Aveyrat and Livet, and between Livet and Les Vernes; and part of the Riouperoux building. It proposes that all other structures (including Riouperoux, Les Clavaux and Pierre Eybesse) are demolished.

Owing to its classified status, EDF is committed to the conservation of Les Vernes on a voluntary basis, is working to restore the exterior of the building, and has developed a 5-year, € 1.5m plan for its maintenance for which they have sought funding from DRAC. EDF has opened discussions with DREAL on their concession requirements, and has obtained agreement from DREAL that Les Vernes power plant can be conserved.

EDF has been working with CG38 to find a use for the conserved Les Vernes, and solutions for Livet I and II and Les Roberts which would allow the buildings to be conserved, whilst serving an economically-beneficial purpose. EDF has committed to contributing the amount it would cost to demolish the buildings to their conservation, and CG38 have signalled that they may commit additional resources if a viable proposal is found. Proposals that have emerged for Les Roberts include a municipality leisure centre (ultimately not suitable for reasons of cost, access and parking) and a kayaking centre (recently proposed). The Espace Gaia study was commissioned to encourage local stakeholders to develop and make proposals, but no other proposals have emerged to date, and following the closure of a 2-month window for proposals on June 16th, a decision is likely to be made to take the call for proposals for Les Vernes and Livet I and II outside of Gavet-Livet to a wider area. If uses are found for Livet and Les Roberts, then it is possible CG38 will propose them for classification or the department-level heritage label, providing a process to ensure the management of their heritage in the long term.

In relation to the scoring statements' requirements, these are processes to ensure management, and will continue into the operation stage.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

The most significant risks are that the activities described under basic good practice above do not succeed in finding viable uses for the structures, and the authorities require EDF to dismantle and destroy some with genuine heritage value to comply with the concession requirements, particularly Livet I and II. DREAL has confirmed that decommissioning must include the deconstruction of a maximum number of assets and limit the conservation of assets to a minimum, ie. Les Vernes power plant only.

The most significant opportunities are (i) finding economically sustainable uses for these structures that enables their value to be enhanced, and (ii) finding the means to conserve additional structures that are not of as significant heritage value, but their conservation may enhance the overall cultural heritage value of the valley, and its contribution to economic development. The ongoing discussions between EDF, CG38, the municipality, and recently Patrimoine Romanche, to find solutions to Livet I and II, Les Vernes and Les Roberts respond partly to (i). However, there is no process to address (ii), for example by conserving at least some of the associated infrastructure identified in the architectural study. The 'Espace Gaia' study has provided a commendable process to identify opportunities, but is not a process to respond to these opportunities.

Both EDF and the municipality have justifiable concerns that they may be faced with ongoing operation and maintenance costs, and all agree on the need to find commercial uses, and that classification now would limit the possibility of an entrepreneur or other proponent emerging with a proposal. The conservation of the heritage of Livet I and II and Les Roberts is therefore in a 'catch-22' situation, which can only be solved by appealing to potential proponents outside of Gavet-Livet in a relatively short window of time. The regulatory authorities do not have a process to anticipate the risk that no proponent will come forward from the local area, or the risk that there will be no proponent from a wider area in the next few months, and respond with alternative strategies, including classification. Ultimately the process to determine the fate of the most significant of the two facilities, Livet I and II, is not clear.

EDF is bound by its concession stipulations to decommission the plants, so it would be inappropriate for a request to classify any of the structures to be made by EDF. Indeed, EDF's MOA has gone far beyond what can be expected of EDF, with considerable effort, to find solutions. Any request for classification would need to be made by another body, and the French state would need to respond as the owner of the facilities. Decisions on heritage are required in the next few months for there to be sufficient time for studies on costing the full decommissioning scenario in 2014. The only process used to date is the EDF's discussion (instigated by EDF) with DREAL, but ultimately the French state would be required to respond to these risks and opportunities. The absence of adequate processes to respond to the risk that EDF will be required by its concession obligations to destroy heritage, or to the opportunity to conserve heritage for the economic development of the valley is a **significant gap**. This is not a reflection on EDF's performance, but results from the authorities' governance of the decommissioning process.

Criteria met: No

13.2.3 Stakeholder Support

Analysis against basic good practice

Scoring statement: *There is general support or no major ongoing opposition amongst directly affected stakeholder groups for the cultural heritage assessment, planning or implementation measures.*

Heritage stakeholders have been involved from a very early stage (as early as the classification of Les Vernes) and a range of stakeholders have been involved in the Espace Gaia study, including at a public meeting held on 16th April 2013 at which the study's findings were presented. There is widespread support amongst local stakeholders, the municipality, Patrimoine Romanche, ABF, and CG38 for the assessment and planning to date, though there are varying views on the proposed implementation measures. Some stakeholders argue for all plants to be conserved with examples of their associated infrastructure (even though this would go beyond the architectural study's recommendations) and some strongly argue for EDF to sponsor the use of one or more of the plants as part of a valley tour or complex of museums complementing the Hydrelec Museum. Stakeholders understand EDF's concession obligations, and the need for commercially viable, job-creating purposes, and it is likely that they will support the ultimate measures taken. Most stakeholders agree that the conservation of Livet I and II and Les Roberts only is acceptable, and there is unlikely to be any major ongoing opposition in this case. There is broad agreement amongst stakeholders that EDF has put a great deal of effort into finding a solution, has involved stakeholders, and has explained the situation clearly.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, formal agreements with the directly affected stakeholder groups have been reached for cultural heritage management measures.*

The classification of Les Vernes and EDF's agreement with DREAL on its conservation, which is recorded in the minutes of a meeting, can be regarded as a formal agreement. However there are no other formal agreements. This is not expected at this stage and is not considered a significant gap.

Criteria met: Yes

13.2.4 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives in place to manage cultural heritage issues have been and are on track to be met with no significant non-compliances or non-conformances, and cultural heritage related commitments have been or are on track to be met.*

The quest to find commercially viable and job-creating uses for Livet I and II, Les Vernes and Les Roberts is in conformance with EDF's corporate commitments on social responsibility (to develop and sustain links with local communities). EDF's commitments made to conserve Les Vernes are on track, and there are no non-compliances.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

No evidence has been found of any non-compliances or non-conformances.

Criteria met: Yes

13.2.5 Outcomes

Analysis against basic good practice

Scoring statement: *Negative cultural heritage impacts arising from project implementation are avoided, minimised, mitigated and compensated with no significant gaps.*

For the decommissioning project this scoring statement can be understood as 'plans will avoid, minimise, mitigate and compensate negative cultural heritage impacts arising from project implementation with no significant gaps'. On the basis that Les Vernes is classified and that Livet I and II are identified as having architecture as distinctive as Les Vernes, any gaps in plans to avoid impacts concerning these plants only would be considered significant.

There are satisfactory plans for the avoidance of impacts on Les Vernes, but if no plans are found for Livet I and II, their planned demolition would be a significant gap in the avoidance of impacts. Gaps concerning plans to avoid the impact of decommissioning Les Roberts, the other plants and all associated infrastructure of lower heritage value are not significant at the level of basic good practice. As described above, EDF and its stakeholders are striving to establish plans for the heritage of Livet I and II to be conserved, thereby avoiding the impact of their demolition. At this stage, these efforts are sufficient to meet this scoring statement, on the assumption that solutions will be found. The absence of a process to address the risk that they are not is discussed under Management.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, negative cultural heritage impacts arising from project implementation are avoided, minimised, mitigated and compensated with no identified gaps; and contributions to addressing cultural heritage issues beyond those impacts caused by the project are achieved or are on track to be achieved.*

However it is clear that there will be impacts on heritage, possibly Les Roberts and certainly some of the other infrastructure (of less value than Les Vernes and Livet I and II, but nonetheless of some heritage value, as identified in the architectural study). There are no plans in place to mitigate these impacts, for example by the conservation of components of the infrastructure in the Romanche or Hydrelec museums or elsewhere, or by compensation (for example by removal and reconstruction). It is notable that a weir is being preserved for the purposes of avoiding erosion (see I-16), but that preservation of any associated infrastructure for heritage conservation is not considered.

Contributions to addressing cultural heritage issues beyond the impacts caused by the project might in this case concern support to other features or facilities concerning industrial heritage in the valley, such as Keller House or the Romanche Museum. There are no plans in place for such contributions, but this of less significance than the absence of plans for the mitigation of impacts.

The absence of plans to mitigate the loss of the structures of heritage value other than Les Vernes, Livet I and II and components of the heritage of the decommissioned plants is a **significant gap** against proven best practice. Note that (similarly to the gap on Management) this is a gap in the performance of the project (ie the developer and the institutional and regulatory context of the development), and is not necessarily a gap in EDF's performance, as EDF does not own the facilities.

Criteria met: No

13.2.6 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

The project meets the criteria for basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

Regulatory authorities do not have a process to respond to the risk that EDF will be required by its concession obligations to destroy Livet I and II, and there are no processes to respond to the opportunity to conserve this heritage for the economic development of the valley.

The absence of plans to mitigate the loss of some of less valued components of the heritage of the decommissioned plants is a significant gap against proven best practice.

2 or more significant gaps

13.3 Scoring Summary

The decommissioning project has direct implications for the conservation of the heritage value of the plants and their associated infrastructure. EDF has commissioned a series of studies, using appropriate expertise, to assess the cultural heritage value of the plants, and steps required for its conservation, including the Espace Gaia study which sought to establish local communities' and stakeholders' requirements.

There is a significant risk that EDF will be required to dismantle and destroy structures with genuine heritage value to meet their concession requirements. Therefore EDF has obtained DREAL's confirmation that Les Vernes power plant may be conserved and is committed to its conservation on a voluntary basis.

Stakeholders understand EDF’s concession obligations, and agree that commercially viable, job-creating purposes should be found to support their conservation. On this condition, some stakeholders would like to see Livet I and II and Les Roberts conserved. There is broad agreement amongst stakeholders that EDF has put a great deal of effort into finding a solution.

However, there is a significant risk that solutions will not be found, and EDF will be obliged to destroy Livet I and II and Les Roberts along with other plants and associated structures. The absence of a process by which one of the regulatory authorities would resolve this conflict, and enable the project to take the opportunity to conserve heritage for the economic development of the valley is a significant gap against proven best practice.

In the case that plans to find a commercial investor in Livet I and II, which are of greatest heritage value, succeed, it will remain the case that there will be impacts on other heritage, possibly Les Roberts and certainly some the other infrastructure. There are no plans in place to mitigate these impacts, which is a significant gap against proven best practice. As EDF is not the owner of the plants, these gaps are not a reflection on EDF’s performance, but result from the authorities’ governance of the decommissioning process.

There are two significant gaps against proven best practice, resulting in a score of 3.

Topic Score: 3

13.4 Relevant Evidence

Interview:	4, 11, 16, 29, 30, 36
Document:	19, 50, 53, 55, 115, 116, 132, 133, 134, 135, 229-238, 239, 240, 255, 256, 302, 303, 304
Photo:	18, 19, 20, 21, 22

14 Public Health (I-14)

This topic addresses public health issues associated with the hydropower project. The intent is that the project does not create or exacerbate any public health issues, that improvements in public health are achieved through the project in project-affected areas where there are significant pre-existing public health issues, and that commitments made by the project to implement public health measures are fulfilled.

14.1 Background Information

There are no identified public health issues associated with surface waters in the region or the project and the capacity of the public health system in France is very high. No public health risks or opportunities could be identified by stakeholders interviewed during this assessment. Therefore this topic is of low relevance to the assessment of sustainability of the project and some of the scoring criteria are not relevant. Issues of public safety are covered under I-5 Infrastructure Safety, and disposal of any contaminated material from construction or decommissioning is addressed under I-18 Waste, Noise and Air Quality.

14.2 Detailed Topic Evaluation

14.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Public health issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.*

There are no significant public health issues associated with the Livet-Gavet area or the new project. France has a well-developed national public health system which covers the local inhabitants and the construction workforce. The assessment of impacts of the project, as described in I-3, has been thorough and did not identify any issues of public health. A large proportion of the workers live in the valley so this monitoring would pick up any new public health issues arising.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of public health issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities for different community groups that become evident during implementation.*

The Protocol scoring statement requirements are not relevant in this context, where there are no significant public health issues and public health system capacity is high.

Criteria met: Yes

14.2.2 Management

Analysis against basic good practice

Scoring statement: *Processes are in place to ensure management of identified public health issues, and to meet commitments, relevant to the project implementation stage; plans are in place for the operation stage for ongoing public health issues management including hand-over to local authorities as appropriate.*

No issues have been identified and no management measures specific to public health are required during implementation or operation. Ongoing monitoring of environmental incidents would address any public health risks arising from emissions to air or water. The second part of this scoring statement concerning the operation stage and hand-over to local authorities is not relevant in this context.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

EDF's environmental management processes are sufficient to anticipate and respond to emerging risks and opportunities if any were to emerge.

Criteria met: Yes

14.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives in place to manage public health issues have been and are on track to be met with no significant non-compliances or non-conformances, and public health related commitments have been or are on track to be met.*

There are no objectives or commitments concerning public health. There are no non-compliances or non-conformances concerning public health.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

There are no non-compliances or non-conformances.

Criteria met: Yes

14.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *Negative public health impacts arising from project activities are avoided, minimised and mitigated with no significant gaps.*

There are no public health impacts of the construction or decommissioning projects or the operation stage.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, negative public health impacts arising from project implementation are avoided, minimised, mitigated and compensated with no identified gaps; and enhancements to pre-project public health conditions or contributions to addressing public health issues beyond those impacts caused by the project are achieved or are on track to be achieved.*

There are no opportunities to enhance public health or address issues beyond the impacts caused by the project.

Criteria met: Yes

14.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

14.3 Scoring Summary

There are no existing public health issues in the region and the project does not create any new issues. There are no specific improvements in public health that can be achieved through the project. No objectives or commitments to implement public health measures would be warranted in this context.

Topic Score: 5

14.4 Relevant Evidence

Interview:	3, 6, 31, 32, 34
Document:	None
Photo:	None

15 Biodiversity and Invasive Species (I-15)

This topic addresses ecosystem values, habitat and specific issues such as threatened species and fish passage in the catchment, reservoir and downstream areas, as well as potential impacts arising from pest and invasive species associated with the project. The intent is that there are healthy, functional and viable aquatic and terrestrial ecosystems in the project-affected area that are sustainable over the long-term; that biodiversity impacts arising from project activities are managed responsibly; that ongoing or emerging biodiversity issues are identified and addressed as required; and that commitments to implement biodiversity and invasive species measures are fulfilled.

15.1 Background Information

The Romanche valley rises steeply from an altitude of 400 m ASL at Gavet to 700 m ASL at Livet. The forests of the valley are largely intact, disrupted only by small settlements, historic conversion of alluvial terraces to pasture, and limited light industry. Forests are populated by oak, maple and ash, although riparian woodland is largely ash and willow. The ecological continuity of the river itself is disrupted by a series of hydropower plants, including those to be decommissioned. There are two protected areas in the vicinity of the project: ZNIEFF II 3821 *Massif de Belledonne et Chaîne des Hurtières* on the right side of the valley; and ZNIEFF 3826 *le Massif de Taillefer, du Grand Armet et du Coiro* on the left side. Biodiversity conservation is regulated by DREAL with input from the Conseil National de Protection de la Nature (CNPN).

The project site provides habitat for some protected species of birds, bats and reptiles. There are two endangered bat species which hunt near the project site: the Barbastelle (*Barbastelle barbastellus*) and the Common Serotine (*Eptesicus serotinus*) which are 'endangered' and 'vulnerable' respectively on the IUCN Red List of vertebrates for the Rhône-Alpes. There are three species of reptile protected at the national level, the Wall Lizard (*Podarcis muralis*), the Green Lizard (*Lacerta bilineata*) and the Green and Yellow snake (*Hierophis viridiflavus*). The Redback Shrike (*Lanius collurio*) is also present and is nationally protected.

15.2 Detailed Topic Evaluation

15.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Biodiversity issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.*

The ESIA analysed existing data, undertook new field surveys and employed appropriate expertise to assess biodiversity issues related to the project. EDF internal competency was complemented by experts from different disciplines brought in from specialist consulting firms. The assessment made an inventory of the pre-project conditions at each construction site, documenting forest, vegetation, birds, mammals, fish, amphibians and reptiles, using recognised sampling methodologies, and assessed the ability of the Romanche to support the development of benthic macrofauna. The assessment notes the presence of five Natura 2000 areas in the region, but concludes none will be affected by the construction works. Project stakeholders, including environmental NGOs have reviewed the ESIA and believe that it accurately identifies biodiversity issues in the area. There is broad stakeholder support for the quality of the assessment and for the expertise employed.

Further detailed ecological investigation was undertaken by KARUM consultants in order to apply to the CNPN for an exception from regulations protecting certain species found at the site. Their report, published in 2011,

details the affected area's flora, aquatic fauna, insects, amphibians, reptiles, birds and mammals, investigates potential impacts on key species, and suggests measures to avoid, minimise, mitigate and compensate impacts.

EDF has commissioned a number of studies for the decommissioning phase which are ongoing and include:

- GAY Environment consultants, to characterise the hydro-biological and physiochemical characteristics of the Romanche between Livet and Gavet;
- Mosaic Environment consultants, to develop an inventory of natural flora and fauna environments over the 173 hectares around the five existing intakes and six plants;
- Environmental NGO Frapna, to comprehensively study the valley's terrestrial biodiversity over 18 months, extending beyond the impact of the project; and
- A study into bats which inhabit the old power stations will survey if bats are present at each of the existing structures and then propose recommendations for how to approach the issue.

Two further studies remain at the technical specification stage: the design of fish passes for the intake of Clavaux, and re-vegetation of riverbanks.

Monitoring of biodiversity is being undertaken during the project implementation stage appropriate to the identified issues. An EDF ecologist visits the site twice a month to check that planned measures are being correctly implemented and are avoiding impacts, particularly regarding terrestrial flora and fauna. Additional visits also occur during operations of greater sensitivity such as the deforestation of riparian areas. The project's impact will be checked by a final inventory of biodiversity to be undertaken when the project is commissioned, which will determine the final rehabilitation measures.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of biodiversity issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.*

Two members of staff, one on site and one in CIH, are responsible for collating environmental monitoring information. This should enable any inter-relationships to be identified on a project of this scale, as it allows the effects that actions in one area might have on another to be analysed and identified. However, no requirement for this has arisen to date. A monthly management report is compiled and circulated to CIH, UP Alpes and DPIH, covering all aspects of the construction project including biodiversity. Results are discussed and the global vision of the project allows inter-relationships to be analysed.

The environmental monitoring program has shown that it can take into account new risks that become evident during implementation, but is less effective at opportunities (see Management).

EDF environmental specialists maintain a 'journal of site environment' which is updated monthly with new issues to be monitored.

Criteria met: Yes

15.2.2 Management

Analysis against basic good practice

Scoring statement: *Processes are in place to ensure management of identified biodiversity issues, and to meet commitments, relevant to the project implementation stage; and plans are in place for the operation stage for ongoing biodiversity issues management.*

The processes to ensure management and meet commitments that are described under I-3 are relevant to biodiversity and invasive species. The ESIA outlines measures to avoid, minimise, mitigate and compensate the project's negative biodiversity impacts for both the construction and operation phases. The *dossier d'exécution* and the prefectural decree, provide the basis of the contractual requirements between EDF and the lead contractor. Responsibilities and budget are allocated to biodiversity projects in the 'Project Tracking Document'.

In addition, EDF has taken a number of specific measures to reduce impacts on biodiversity through the design and construction phase, and plans for the rehabilitation of biodiversity are being developed. For example, effort was made to minimise the site's land area by siting the powerhouse underground and land clearing was carried out outside of key bird breeding seasons to minimise disruption. Electro-fishing was used to remove fish from the area when the river diversion took place before work began.

The CNPN permit to destroy protected species requires the implementation of compensatory measures, including establishing biodiversity management areas on two sites to conserve and restore the habitats and populations of the protected species. These will be a 16 hectare site 'Pont-de-Gavet' on land which is currently owned by EDF, and a 40 hectare site 'Île de Falcon' on state-owned land, both located in the Romanche valley. L'Île de Falcon is an area of biodiversity interest due to its location on the Romanche and situation on an alluvial plane without human development. The compensation areas will be managed by the ENGO Avenir and a comprehensive management plan has been prepared, clearly defining actions and responsibilities. EDF will pay for this service under a 15 year assistance contract.

A fish ladder will be installed at both the new Livet intake structure and at the Clavaux intake (which will not be decommissioned). Both ladders will be designed to allow trout and chabot (bullhead) to pass. An innovative downstream fish pass is also planned for the intake structure. These passes will not significantly improve river connectivity immediately as a barrier to fish migration will remain at the Gavet dam just below the new project's tail race. EDF will be obliged to provide connectivity through the remaining barriers in due course under the requirements of the Water Framework Directive, but plans are not in place at present.

Finally, plans for site rehabilitation will include measures of benefit to biodiversity. Preparation of the plans will be tendered in 2015, but the broad requirements are set out in the *dossier d'exécution*, such as re-use of top soil removed from the Livet site at the start of construction to minimise the import of invasive species, and re-vegetation with native species.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

A number of processes are in place to anticipate and respond to emerging risks; these are detailed in I-3. Site inspections by EDF environmental specialists each month are of particular relevance to biodiversity. They are discussed at weekly site meetings to identify any new biodiversity risks arising, then issues are systematically addressed in subsequent meetings. The frequency of visits varies with the phases of work. The deforestation works were identified as a high risk period for biodiversity so regular checks were made, and this identified a new population of lizards which were successfully relocated. Another emerging risk identified was the disruption of a local species of bat by the site's artificial lighting. This prompted a switch to a special type of bulb which does not attract certain insects so as not to interfere with the bat's normal diet. Ongoing studies for the decommissioning phase of the project will continue to identify new risks for the project.

There is no systematic process in place to identify and respond to new opportunities to improve biodiversity around the project. However, some new opportunities are being explored, for example EDF are working with ONEMA to improve fish habitat in the Romanche and its tributaries. The lack of a systematic process to identify

opportunities is a gap against the scoring statement, but is not considered significant as some opportunities are being explored.

Criteria met: Yes

15.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives in place to manage biodiversity issues have been and are on track to be met with no significant non-compliances or non-conformances, and biodiversity related commitments have been or are on track to be met.*

No non-conformances or non-compliances were identified by the stakeholders interviewed. Biodiversity-related commitments have been or are on track to be met. The project conforms with EDF's corporate commitment to 'reduce environmental footprint, particularly regarding biodiversity'.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

No non-conformances or non-compliances were identified by any stakeholders interviewed.

Criteria met: Yes

15.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *Negative biodiversity impacts arising from project activities are avoided, minimised, mitigated, and compensated with no significant gaps.*

Adverse impacts have been avoided to a large extent through the project's design, particularly by placing structures underground, thereby reducing the final footprint of the project to just 1.5 ha. EDF environmental specialist's site visit sheets show that biodiversity impacts are currently being avoided or minimised. The construction site at Livet has destroyed a length of 700 meters of riparian woodland and a small amount of alluvial woodland at the water intake, but these will be compensated by conservation of the areas at L'Île de Falcon and Pont de Gavet. Riparian vegetation will be preserved where possible, or if has to be cleared, will be restored following commissioning.

The CNPN assessment concludes that the project will not affect the ecological integrity of the valley. Although there are statutory protected species at the site, the destruction of their populations at this site is not significant compared to the entire population, and disruption to breeding cycles will be minimised. All of the habitat lost to the construction project will be compensated by conservation measures in additional areas, to create a net increase in habitat for protected species. The creation of the small reservoir upstream of the intake could have a small adverse impact on biodiversity, due to habitat change resulting as flow rate will be reduced and sedimentation will increase. No impacts on biodiversity downstream of the plant are predicted. The studies into the impact of the decommissioning project on biodiversity conclude that there will be minor impacts only.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, negative biodiversity impacts arising from project implementation are avoided, minimised, mitigated and compensated with no identified gaps; and enhancements to pre-project biodiversity conditions or contribution to addressing biodiversity issues beyond those impacts caused by the project are achieved or are on track to be achieved.*

There are no negative biodiversity impacts arising from project implementation that are not avoided, minimised, mitigated or compensated. No gaps were identified in discussions with the regulator or stakeholders. The CNPN study states that at minimum the biodiversity impact of the overall project will be neutral. It is notable that there is no NGO resistance to the project.

The biodiversity compensation areas proposed are three times the size of the area affected by the construction project and can be considered to provide an enhancement to the conservation of natural habitats. The conservation of species at these sites will be enhanced by active management measures delivered by Avenir to cultivate habitats for each species affected by the project.

In the by-passed reach, increased consistency of stream flow and connectivity is predicted to favour the development of benthic fauna which will in turn support other aquatic ecology. The species composition of the ecosystem is not expected to change, but could increase in productivity. Trout will be the key species to benefit from improved continuity, although there may be an opportunity for Char (Omble) to begin using the river if the whole river is opened up. A number of stakeholders believe that biodiversity conditions could be enhanced beyond pre-project levels through improved river connectivity and the compensation measures, although this is not yet proven.

Criteria met: Yes

15.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

15.3 Scoring Summary

The biodiversity of the project area and potential project impacts have been thoroughly assessed by multiple organisations. Issues related to protected species and fish passage have been assessed in specific studies. Biodiversity impacts arising from project activities are managed responsibly and checked regularly through ongoing monitoring, and emerging biodiversity issues have been identified and addressed as required. Commitments to implement biodiversity and invasive species compensation measures are fulfilled with no gaps identified by any stakeholders.

There is no systematic process in place to identify and respond to emerging biodiversity opportunities, however some opportunities are being undertaken on an *ad hoc* basis, so this is not considered a significant gap at the best practice level under the management criteria.

The project-affected terrestrial and aquatic habitats are predicted to remain healthy, functional and viable over the long-term owing to effective management and generous compensation measures, and the conservation status of the protected species referred to in the background will not be affected.

15.4 Relevant Evidence

Interview:	3, 8, 18, 21, 31, 35, 40, 42,
Document:	30, 32, 34, 35, 50, 51, 52, 53, 54, 55, 56, 83, 84, 88, 89, 90, 91, 100, 107, 115, 116, 117, 136, 138, 157, 159, 169, 170, 183, 184, 201, 203, 210, 211, 212, 214, 272, 274
Photo:	6, 7, 8

16 Erosion and Sedimentation (I-16)

This topic addresses the management of erosion and sedimentation issues associated with the project. The intent is that erosion and sedimentation caused by the project is managed responsibly and does not present problems with respect to other social, environmental and economic objectives; that external erosion or sedimentation occurrences which may have impacts on the project are recognised and managed; and that commitments to implement measures to address erosion and sedimentation are fulfilled.

16.1 Background Information

The Romanche is a glacial river which transports a high level of sediment. There are two upstream hydropower projects, Grand Maison and Chambon, both with significant storage capacity. Sediment is deposited in these reservoirs and is periodically managed by EDF through controlled flushing operations. Two tributaries to the Romanche, the Vaudaine and Infernet, downstream of these dams also supply sediment input, maintaining the river's sediment balance. At present, upstream of the site, significant sediment deposition occurs in the Plaine de Bourg d'Oisans, causing widespread raising of the river bed. Below the project site in Plaine de Vizille, the sediment budget is balanced and erosion is low.

Key erosion and sedimentation issues for the project are temporarily increased sedimentation during the construction and decommissioning works, potential river bank and bed erosion following decommissioning, and high wear of turbines due to sediment load. The new project will serve to improve river continuity restoring a more 'natural' sediment regime.

At the corporate level, DPIH has a policy of favouring sediment continuity which it backs up with a commitment to monitor and measure erosion and sediment issues to allow it to devise more effective management measures. Corporate policy is to improve sediment management in all cases, particularly if sediment is fine or polluted.

Reservoir sediment management is discussed in topic I-19.

16.2 Detailed Topic Evaluation

16.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Erosion and sedimentation issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.*

A catchment-level assessment of the current erosion and sedimentation regime on the Romanche and the potential impacts of the new project was undertaken as part of the ESIA. The ESIA identified key construction-related erosion and sedimentation risks to be the construction of the intake structure at Livet, the construction of the new bridge at Ponants, and the excavated material from the tunnelling operation could also leach sediments to the Romanche.

In addition, EDF has subcontracted the University of Liège since 2006 to undertake a number of separate studies using numerical and physical models. Numerical models were used to represent the topography and hydraulics of the river and to consider various development scenarios. The models were developed and validated using existing data and on-site measurements. Research investigated sediment transport in each of the project phases, the impact of high flows on erosion and sedimentation during construction, the design of the geometry of the water intake, analysis of the particle sizes that are likely to pass through the turbines, new

reservoir sedimentation equilibrium, reservoir flushing requirements, and the impact of decommissioning on erosion and sedimentation.

Iterative work between the University of Liège and EDF has allowed project design to evolve based on improved understanding of the potential impacts of construction, decommissioning and operation. A key risk that has been identified is the removal of the existing Clavaux intake structure, which could cause downstream erosion in a location where there are houses, a factory and a road.

The bulk of research and management has focused on the erosion of riverbanks and bed which could be caused by the removal of the water management structures after decommissioning. Technical specifications have been prepared for future studies into the fish passes and re-planting of riverbanks that will be required by the decommissioning project.

The impact of the high level of sediment in the Romanche on the turbines has been assessed, concluding that the runners will have to be replaced every two years. Another assessment has highlighted the instability of the cliffs lining the Romanche valley and the risk of falling blocks and mass collapse for the construction site, and the risk of mudslides downstream of the Vena bridge. This is discussed in more detail under I-5 Infrastructure Safety.

Monitoring during implementation concerns suspended solids in the Romanche and is being undertaken both by contractors and by EDF. Contractors are obliged to monitor suspended solids three times per week. The results of the analysis are sent to EDF for information and possible corrective action if required. EDF undertakes weekly monitoring of a number of physiochemical water parameters, including suspended solids. EDF site staff make continuous visual checks of river sediment levels, although there is no continuous quantitative monitoring of sediment levels in the river. EDF use an innovative hydraulic conductivity test to check the clogging of riverbed substrate by sedimentation. This monitoring is carried out occasionally and results will be used to provide a baseline prior to decommissioning.

Sediment transport will be monitored throughout decommissioning works, but plans have not yet been defined. The monitoring program will be defined in the preliminary study, due in 2015, and analysis of the sediment regime to define the baseline is underway.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of erosion and sedimentation issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.*

Monitoring of erosion and sedimentation issues during project implementation takes into account inter-relationships amongst issues. Two members of staff, one on site and one in CIH, are responsible for collating environmental monitoring information. This allows the effects that actions in one area might have on another to be analysed and identified, for example that deforestation works led to an increase in suspended solids in the river. A monthly management report is compiled and circulated to CIH, UP Alpes and DPIH, covering all aspects of the construction project including erosion and sedimentation. Results are discussed and the global vision of the project allows inter-relationships to be analysed.

Suspended solids monitoring data is also shared with two water agencies who analyse the data to look for broader trends. These reports are supplied with a summary of the various works occurring at site at the time to allow causes and effects to be brought together.

The sediment monitoring program has shown that it can take into account new risks and opportunities that become evident during implementation. For example, the frequency of monitoring is increased at times when

issues are more likely to arise, such as on the creation of the river diversion. EDF environmental specialists maintain a 'journal of site environment' which is updated monthly with emerging issues to be monitored.

Criteria met: Yes

16.2.2 Management

Analysis against basic good practice

Scoring statement: *Processes are in place to ensure management of identified erosion and sedimentation issues, and to meet commitments, relevant to the project implementation stage; plans are in place for the operation stage for ongoing erosion and sedimentation issues management.*

In the construction phase of the project, erosion and sedimentation requirements are defined in the *dossier d'exécution* which forms the basis of contractor requirements. The contractor is obliged to organize the site in order to minimize the increase in total suspended solids in the river particularly when undertaking work directly in contact with the Romanche. Contractors have an erosion and sedimentation management plan which details how their contractual requirements will be met. Contractors monitor and record their compliance with their requirements and EDF monitor contractor performance through water quality monitoring and regular site inspections. This process is described in detail in I-3 and I-17.

In the construction phase, management measures have been put in place to maintain ground stability at Ponants where material excavated from the tunnels has been stored. Measures include creating compacted layers and using gradients to minimise the impact of runoff. Suspended solid input to the water course will be reduced by collecting and treating site runoff.

For the decommissioning phase of the project, erosion and sediment modelling by the University of Liège has fed into the current management plans. The current proposal is that Clavaux dam will remain, the Livet dam will be lowered, and the other three will be removed. Nine weirs which are not owned by EDF will remain in the river to maintain river bank stability. The intake at Clavaux cannot be removed completely without causing significant erosion so a weir will be put in place to maintain an elevated water level to reduce the intensity of the impact. Removing the Pierre-Eybesse water intake will require an enlargement of the riverbed to maintain riverbank stability. Dismantling the structures at Rioupéroux and Roberts will require significant enlargement of the riverbed and reinforcement of the river bank. Additional riverbank protection measures will be used along the affected stretch. The physical removal of existing structures from the river will be done during low flow periods in order to minimise sediment taken by the river. A detailed management plan to achieve this will be contained in the preliminary study.

An erosion and sedimentation management plan for the operation phase of the project has not yet been finalised. However, the principles of this plan are set out in the *dossier d'exécution*, and the way in which the project has been designed removes the need for significant ongoing management measures. Natural vegetation rather than artificial structures will be used to protect the banks from erosion. The project aims to operate a sediment management regime which is as close to the natural regime as possible, facilitated by the ability to open the dam to allow sediment transport during floods. The operating instructions for the dam, intake and flushing procedures will be agreed with DREAL before commissioning, but have not yet been drafted.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

The site is inspected by EDF environmental specialists each month using a QSSE framework to assess contractor compliance with their erosion and sedimentation requirements. The site inspections are discussed at weekly meetings to identify environmental risk and opportunities arising, then issues are systematically addressed through subsequent meetings. These site visits complement regular monitoring of erosion and sedimentation through qualitative and quantitative methods by EDF and other stakeholders such as SIERG (Grenoble potable water company), which allows the project to identify and respond to emerging erosion and sedimentation risks. For example during the river diversion works, a visual check identified increased sedimentation in the river which led to rapid corrective action.

There is no clear process for identifying and responding to new opportunities. For example SIERG has identified an opportunity to reduce the impact of sedimentation by declogging the river bed in parts of the Romanche through targeted releases of water. No agreement or management plan to achieve this has been put in place and this discussion is ongoing. The lack of a process to identify and respond to new opportunities is a **significant gap** at this level.

Criteria met: No

16.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: Processes and objectives in place to manage erosion and sedimentation issues have been and are on track to be met with no significant non-compliances or non-conformances, and erosion and sedimentation related commitments have been or are on track to be met.

There are no significant non-conformances or non-compliances and all erosion and sedimentation-related commitments have been or are on track to be met.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: In addition, there are no non-compliances or non-conformances.

No non-conformances or non-compliances were raised in interviews with stakeholders during this assessment.

Criteria met: Yes

16.2.4 Outcomes

Analysis against basic good practice

Scoring statement: Erosion and sedimentation issues during project implementation are avoided, minimised and mitigated with no significant gaps.

Erosion and sedimentation issues during project implementation to date have been avoided, minimised and mitigated with no gaps. Monitoring of suspended solids has not revealed an increase in sedimentation in the river. Occasional temporary increases in sediment to the water course caused by construction processes have been noted by EDF site managers, but rapid corrective action has prevented any significant issue from developing. The construction process has not caused additional river erosion as the river flow rate has not been altered. No additional sediment has been reported in the Romanche by SIERG as a result of construction.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: In addition, erosion and sedimentation issues during project implementation are avoided, minimised, mitigated and compensated with no identified gaps; and enhancements to pre-project erosion and

sedimentation conditions or contribution to addressing erosion and sedimentation issues beyond those impacts caused by the project are achieved or are on track to be achieved.

Erosion and sedimentation issues during project implementation to date have been avoided, minimised, and mitigated with no gaps. Compensation has not been required. No gaps have been identified by the regulator, or stakeholders with respect to erosion and sedimentation management.

Following decommissioning of the old plants, the sediment regime will be enhanced compared to pre-project conditions by improving the river's continuity. The new arrangement will allow a more 'natural' sediment transport regime, which EDF and other stakeholders believe will be of benefit to natural integrity of the river. There are no erosion or sedimentation issues beyond impacts caused by the project that could be addressed by the project.

Criteria met: Yes

16.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There is no process in place to identify and respond to emerging opportunities to improve erosion and sedimentation issues associated with the project.

1 significant gap

16.3 Scoring Summary

The current erosion and sedimentation regime in the Romanche has been thoroughly modelled, allowing assessment of the erosion and sedimentation impact of the removal of the old plants and the operation of the new hydropower facility. In addition, EDF has studied potential impacts of the project on erosion and sedimentation during construction and decommissioning works and this work is ongoing. A partnership with the University of Liège has provided independent expertise and modelling to provide detailed understanding of the relevant issues. Studies by EDF have highlighted the potential impact of sedimentation on the project turbines during operation, which will need regular replacement. Erosion and sedimentation issues associated with the construction project have been managed by EDF and contractors responsibly to date and have not presented any problems with respect to other social, environmental and economic objectives. Processes are in place to identify and respond to emerging risks, but there is no similar process in place to identify and respond to emerging opportunities, this is a significant gap against the management criteria at the proven best practice level.

EDF has fulfilled commitments to implement measures to address erosion and sedimentation to date, and are on track to be met in the future. The project will improve the sedimentation regime of the Romanche in the long term and will not cause any new erosion issues.

Topic Score: 4

16.4 Relevant Evidence

Interview:	3, 14, 15, 18, 21, 24, 27, 31, 38, 40
Document:	30, 34, 50, 51, 52, 53, 54, 55, 56, 91, 100, 107, 138, 157, 159, 169, 170, 183, 201, 203, 210,

	211, 212, 214, 220, 228, 267, 270
Photo:	6, 9

17 Water Quality (I-17)

This topic addresses the management of water quality issues associated with the project. The intent is that water quality in the vicinity of the project is not adversely impacted by project activities; that water quality issues are monitored and addressed as required; and commitments to implement measures to address water quality are fulfilled.

17.1 Background Information

There are a number of organisations associated with the water management of the Romanche that are relevant to the project. DREAL is responsible for enforcing water policy including the Water Framework Directive and also manages hydropower concessions. *Office National de l'Eau et des Milieu Aquatiques* (ONEMA - National Office for Water and the Aquatic Environment) provides technical support to DREAL regarding aquatic ecology. *Agence de l'Eau* receives fees from water users which are used to pay for improved water management. *Commission Locale de l'Eau* (CLE) is a local water board comprising water users, politicians and the state, that sets legally-binding targets for water users. *Comité de Rivière* is focused on the Romanche only and launches local projects to protect and improve water quality and reduce flooding. Another important organisation is SIERG (Syndicat Intercommunal des Eaux de la Région Grenobloise) which is responsible for the supply of domestic water in Grenoble, supplied from the Romanche. Each of these organisations has regular input to the project and representatives from each were interviewed as part of the assessment.

Key water quality issues are low biological quality and risk of increased sediment in the water course during construction and decommissioning. Erosion and sedimentation issues are detailed in I-16. Poor biological water quality is due to upstream sewage works and the discharge of untreated sewage from local settlements directly into the Romanche. A new project is being implemented to treat this wastewater but does not involve EDF.

17.2 Detailed Topic Evaluation

17.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Water quality issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.*

The ESIA comprehensively assessed existing water quality and potential impacts of the project's construction and operation. It concluded that physiochemical water quality in the Romanche is good, noting that nitrogen levels are elevated on occasion and seasonal increases in nutrient levels can occur with increased releases from the Aquavallee waste water treatment plant at Bourg d'Oisans. It described bacteriological quality as poor, owing to the absence of bacteriological treatment at the Aquavallee wastewater treatment plant. In addition, low level industrial pollution from cooling and process outflows from Ferro-PEM (INVENSIL) enters the river at Gavet. Groundwater quality is generally good.

The key issue during implementation is the potential for increased suspended solids released to the water course. Other issues during implementation are releases of cement grout or water containing suspended solids from the concrete plant, or oil spills. Groundwater is not expected to be affected by construction and the potential impact of the project on SIERG was assessed to be minimal.

EDF predict that the decommissioning works will not negatively impact water quality. The ESIA for decommissioning will make a full assessment of the potential impact to water quality. An assessment of the

groundwater quality surrounding the Rioupéroux plant has already been undertaken by EDF to determine the existence of contamination of groundwater by tracer compounds and no issues were found.

The ESIA predicts that during operation, there will not be a significant impact on the physiochemical water quality of the Romanche. It predicts no risk of eutrophication in the small reservoir created at Livet due to the short retention time of the water. Water quality in the section of the river which will be by-passed is predicted to improve due to the more consistent flow rate, and the water quality downstream of the project is not expected to change.

Monitoring of water quality in the Romanche during the implementation phase is being undertaken by contractors and by EDF. Contractors are obliged to monitor the quality of water in the Romanche three times per week for pH, temperature, conductivity, dissolved oxygen and turbidity. Contractors undertake complete water analysis every two weeks and the results of the analysis are sent to EDF.

Water quality is monitored twice a month by EDF using a network of six stations on the Romanche up and downstream of each of the three work sites. The following parameters are measured: temperature, conductivity, pH, dissolved oxygen, turbidity, Escherichia coli, Enterococci, NH₄, TOC, BOD, NO₃, NO₂, lead and hydrocarbons. EDF site staff make continuous visual checks of river sediment levels, but there is no continuous quantitative monitoring of sediment levels in the river. SIERG also monitor water quality in the Romanche and its tributaries at eleven points. Analysis assesses physiochemical and bacterial quality and is available to the public.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of water quality issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.*

Water quality monitoring data is recorded by the same staff who process other monitoring records. These staff assess all aspects of the project's impact on the aquatic environment and can identify inter-relationships between issues. The monitoring programs look broadly at risks, causes and effects bringing together different types of data. Water quality data is shared with two water agencies and a water quality specialist within EDF who analyse the data to look for broader trends. These reports are supplied with a summary of the various works occurring at site at the time to allow causes and effects to be brought together. Any unexpected readings are discussed with the MOE project managers to examine potential causes. EDF send a monthly water quality report to SIERG, based on their fortnightly monitoring results. These reports are also shared with DREAL and ARS and allow further interrogation of inter-relationships by these project stakeholders.

The water monitoring program has shown that it can take into account new risks and opportunities that become evident during implementation. For example, the frequency of monitoring is increased at times when issues are more likely to arise, such as on the creation of the river diversion. Adaptation of the monitoring program is facilitated by strong relationships and regular consultation between EDF and the key water management organisations of CLE, ONEMA, Agence de l'Eau and the Comité de Rivière.

Criteria met: Yes

17.2.2 Management

Analysis against basic good practice

Scoring statement: *Processes are in place to ensure management of identified water quality issues, and to meet commitments, relevant to the project implementation stage; and plans are in place for the operation stage for ongoing water quality issues management.*

All potential water quality risks identified in the ESIA that are relevant to construction have been translated into the *dossier d'exécution* and then into the contractual requirements of the contractors. The same process will be used for the decommissioning project. Monitoring of the contractor's compliance with their requirements provides the process to manage water quality, and is described in detail in I-3. The contractor is obliged to take all measures to avoid pollution of rivers and groundwater by oil, chemicals and sewage, through avoidance or treatment. All works likely to cause pollution of the Romanche are required to be accompanied by preventative measures by the contractors responsible for the activities.

A number of measures are being used to minimise the risk of water pollution on site. Rainwater is collected, monitored, treated and disposed of in a specific manner. Settling tanks are used on all three of the construction sites to manage, control and monitor water quality for sediment and pollutants. There are sealed parking areas for construction equipment and any equipment that requires the use of hydrocarbons and lubricants is kept in a sealed pit covered with a tarpaulin. All products used on site which could have a negative impact on water quality are identified in 'Safety Data Sheets' stored in the site office and maintained and updated by the site manager.

The ESIA concludes that there will be no impacts on surface water quality during operation, and no requirement for management measures. Increased consistency in the flow rate in the by-passed stretch is predicted to be sufficient to improve water quality and the health of the aquatic ecosystem. There will be three years of monitoring following project commissioning to ensure that there are no impacts on the surface or groundwater quality of water in the Romanche. If monitoring notes a significant water quality issue in the Romanche which could affect drinking water supply, EDF has an agreement with SIERG to release water from another reservoir, Lac Mort, to meet the requirements for potable water. A plan for the dam's operation to regulate sediment in the river is discussed in I-16 (Erosion and Sedimentation).

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

Processes are in place to anticipate and respond to emerging water quality risks. A comprehensive risk assessment has been undertaken for the entire project, this highlighted environmental risks of hydrocarbon and cement discharge to the river, soil pollution from machinery, noise and air pollution. The assessment is regularly updated with new risks based on ongoing monitoring.

EDF require contractors to draft new 'execution procedures' for each new phase of works. With this document the contractor must explain to the EDF project managers how they will respond to anticipated and emerging risks to water quality.

There is no process in place to identify emerging opportunities to improve water quality and no examples of new opportunities that have been taken by EDF could be identified by this assessment. Opportunities in this context might include addressing the poor biological quality of the water in the Romanche. This is considered a **significant gap** against the scoring criteria at the best practice level.

Criteria met: No

17.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives in place to manage water quality issues have been and are on track to be met with no significant non-compliances or non-conformances, and water quality related commitments have been or are on track to be met.*

Processes and objectives are in place to manage water quality issues and all commitments and requirements have been or are on track to be met. SIERG noted a minor delay in EDF finding an appropriate person to undertake turbidity measurements in the Romanche for the monthly water quality reports. However, this has now been resolved and the reports are received on time, so this is not considered a significant gap.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

The project has no non-compliances or non-conformances regarding water quality. No issues were noted by any interviewees.

Criteria met: Yes

17.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *Negative water quality impacts arising from project activities are avoided, minimised and mitigated with no significant gaps.*

Negative water quality impacts arising from project activities are avoided, minimised and mitigated with no gaps. The catchment has minimal agricultural inputs, no mineral issues of note and SIERG has not noted an increase in suspended solids since the construction of the Gavet project began. The assessment process led to effective management measures which are being applied successfully. This is complemented by regular monitoring to drive adaptive management if required.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, negative water quality impacts arising from project implementation are avoided, minimised, mitigated and compensated with no identified gaps; and enhancements to pre-project water quality conditions or contribution to addressing water quality issues beyond those impacts caused by the project are achieved or are on track to be achieved.*

Negative water quality impacts arising from project activities are avoided, minimised and mitigated with no gaps, and there is no requirement for compensation. No negative impacts on water quality have been noted by stakeholders interviewed. The project will increase the flow of water in the by-passed stretch of river which will enhance water quality in comparison to its pre-project condition by ensuring consistent dilution of effluents. The removal of a number of the dams between Livet and Gavet will create a sediment flow regime that is closer to the natural situation. There are no opportunities to address water quality issues beyond those impacts caused by the project.

Criteria met: Yes

17.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There is no process in place to identify emerging opportunities to improve water quality and no examples of new opportunities that have been taken by EDF could be identified by this assessment.

1 significant gap

17.3 Scoring Summary

The water quality of the Romanche is regularly assessed by several agencies engaged in its management. EDF has undertaken a comprehensive assessment of the potential impacts to water quality that the construction and operation of the new project could have. Studies into the potential impacts of the decommissioning works are ongoing. Contractors have measures in place to prevent emissions to water from the construction site and these are regularly monitored by EDF. The result is that water quality in the vicinity of the project is not adversely affected by project activities and any issue is detected through monitoring and quickly addressed. Whilst systematic processes are in place to identify and address emerging risks to water quality, there is no comparable process in place to identify and address emerging opportunities, which is a significant gap at the best practice level. The project is predicted to improve the water quality of the by-passed stretch of the Romanche when it is in its operational phase, and will not affect water quality up- or downstream of the project. All commitments to implement measures to address water quality are fulfilled and no gaps have been identified by any interviewees.

Topic Score: 4

17.4 Relevant Evidence

Interview:	3, 8, 14, 15, 21, 31, 34, 37, 40, 42, 46
Document:	2, 30, 34, 50, 51, 52, 53, 54, 55, 56, 86, 91, 92100, 107, 137, 138, 154, 157, 159, 169, 170, 183, 187, 201, 203, 210, 211, 212, 214, 221, 225, 268, 269,
Photo:	23

18 Waste, Noise and Air Quality (I-18)

This topic addresses the management of waste, noise and air quality issues associated with the project. The intent is that noise and air quality in the vicinity of the project are of a high quality and not adversely impacted by project activities, and that project wastes are responsibly managed.

18.1 Background Information

The findings on this topic distinguish between the construction project and the decommissioning project. Waste, noise and air quality are relevant to both, but decommissioning is only under preparation at present. Some reference is made below to the decommissioning project, but as it is in an early planning stage, there is little that can be said for Management, Conformance/Compliance and Outcomes.

18.2 Detailed Topic Evaluation

18.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Waste, noise and air quality issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.*

Waste management issues for the new project have been identified as part of construction planning. Monitoring is carried out through completion of a waste register, and both EDF and DREAL conduct regular inspections on the sites. Waste management issues for the decommissioning project are presently being assessed.

Baseline assessment of air quality is not required for hydropower projects under French law. Norms and standards for the construction period are applied and no reference to baseline conditions are needed. The EIA concluded that only two air quality issues are relevant to the project: dust generation and air quality inside the tunnels. As the access roads are all surfaced, this issue pertains only to the actual construction sites. Contractors are responsible for monitoring and both EDF and DREAL conduct regular inspections.

A baseline study of noise conditions was undertaken by the DTG department of EDF as part of the EIA studies, in 2009. It measured noise at 6 sites along the valley. The pre-existing issues were identified as the Ferropem factory (manufacturing alloys of iron and silicon), and the operation of the existing EDF hydropower plants in the valley. The key project-induced issues identified are traffic noise and construction noise (blasting and the operating of machinery). Noise impacts on local fauna (see I-15) have also been identified as an issue. The main impact in the construction period was expected at the Ponants village, as it is the settlement closest to any of the major construction sites. Contractors are responsible for monitoring and both EDF and DREAL conduct regular inspections.

Asbestos issues are monitored through a log book where all the materials containing asbestos are identified by the manager, including the management response. Each site has one log book.

Waste, noise and air quality issues of decommissioning are being investigated as part of the preparation studies on the decommissioning project, with the management of waste in particular a central component of the studies.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of waste, noise and air quality issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.*

EDF and DREAL regularly monitor compliance as well as emerging issues, providing a multi-actor failsafe. This includes monitoring of inter-relationships between air quality, noise and waste. An example is the removal of all waste to approved waste disposal facilities outside of the valley, which creates additional emissions and vehicle noise.

Criteria met: Yes

18.2.2 Management

Analysis against basic good practice

Scoring statement: *Processes are in place to ensure management of identified waste, noise and air quality issues, and to meet commitments, relevant to the project implementation stage; and plans are in place for the operation stage for ongoing waste management.*

Processes have been put in place through comprehensive environmental management programmes required of contractors, and detailed conditions are part of the contract documents for all contractors. All waste has to be classified and sorted and is removed to approved sites out of the valley. There is stipulated timing for blasting and operating hours for heavy, noisy machinery, and regular watering of areas prone to dust development. Topsoil is removed and stored for later use in rehabilitation of construction-affected areas. The use of low-emission vehicles is stipulated to reduce emissions.

During the operating phase the plant will use standard EDF management principles which are the same for all French hydropower installations, utilising special-purpose certified companies for waste management.

It is too early for plans or processes for the management of waste, noise and air quality associated with decommissioning to have been put in place, as they are currently under preparation.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

The detailed specifications contained in the contract requirements for the contractors provide processes to anticipate and respond to both emerging risks and opportunities.

Ongoing communication between the project, the municipality and the community provides a mechanism for emerging issues to come to the attention of project management.

An opportunity has been seized by the construction of the noise barrier at the local school and risks are managed well through the detailed classification and sorting of waste fractions and the ongoing communication with the local residents concerning noise. However, there is no process for anticipating and responding to opportunities. This is a **significant gap**, and is the same gap as on Outcomes.

Criteria met: No

18.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *Processes and objectives relating to waste, noise and air quality have been and are on track to be met with no significant non-compliances or non-conformances, and any related commitments have been or are on track to be met.*

According to the regulator there are no non-compliances, and related commitments have been and are on track to be met.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances.*

There are no non-compliances or non-conformances.

Criteria met: Yes

18.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *Negative noise and air quality impacts arising from project activities are avoided, minimised and mitigated with no significant gaps, and project wastes managed responsibly.*

All impacts are effectively minimised or mitigated with no significant gaps. Waste is managed responsibly through detailed classification, sorting into fractions and subsequent removal to approved off-site facilities.

Noise impacts are of concern to the local community, and whenever they have raised concerns over noise impacts, these have been attended to in an efficient and satisfactory manner according to several interviewees.

Dust impacts are effectively mitigated by regular watering of affected areas.

Studies for the decommissioning project are underway with the specific intention of avoiding, minimising and mitigating negative impacts. However it is obviously too early to say make any prediction whether the resulting plans will be effective.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, negative noise and air quality impacts arising from project activities are avoided, minimised, mitigated and compensated with no identified gaps; project wastes are managed responsibly; and the project contributes to addressing waste management issues beyond those impacts caused by the project.*

The project minimises, mitigates and, where feasible, compensates impacts with no identified gaps and project wastes are managed responsibly. However, the project does not contribute to addressing waste management issues beyond its own impacts, and there are no plans to do so for the later stages, decommissioning or the operation stage. This is a **significant gap**.

Criteria met: No

18.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There is no process to anticipate and respond to emerging opportunities for waste management, and the project does not contribute to addressing waste management issues beyond its own impacts.

1 significant gap

18.3 Scoring Summary

The project has adopted comprehensive management processes for the minimisation and mitigation, primarily, of noise impacts. Waste management is based on detailed specifications to contractors with strict rules regarding classification, sorting and removal. The project has been responsive to the key community concern regarding working hours related to noise from machinery and blasting.

However, the project does not anticipate or respond to emerging opportunities, and does not contribute to addressing waste management issues beyond its own impacts which constitutes a significant gap against proven best practice, resulting in a score of 4.

Topic Score: 4

18.4 Relevant Evidence

Interview:	10, 15, 17, 20, 26, 40 and 47
Document:	50-56, 165, 166, 189, 300 and 301
Photo:	23, 24 and 25

19 Reservoir Preparation and Filling (I-19)

This topic addresses management of environmental, social and economic issues within the reservoir area during project implementation, and planning for reservoir management for the operating hydropower facility. The intent is that reservoir preparation and filling is well managed, taking into account construction, environmental and social management requirements, and future power generation operation, maintenance and multipurpose uses where relevant.

19.1 Background Information

A small reservoir will be created behind the dam at Livet with a capacity of 180,000 cubic meters. The water level will be raised 4.5 metres, and the shallow gradient of this section of the river means that the reservoir will reach two kilometres upstream. The water will be contained in existing man-made dikes so will not flood any new land. When the river is in flood, the dam gates will be opened so the river level should never be higher than it would have been in pre-project flood conditions. Impoundment will reduce flow velocity in the river which will change the habitat available to aquatic ecology, with increased sedimentation potentially affecting benthic fauna.

Discussion of the modelling used to assess sedimentation of the reservoir can be found in I-16.

19.2 Detailed Topic Evaluation

19.2.1 Assessment

Analysis against basic good practice

Scoring statement: *The important considerations prior to and during reservoir filling and during operations have been identified through an assessment process; and monitoring of implementation activities is being undertaken appropriate to any identified issues.*

An assessment of reservoir preparation and filling was submitted to DREAL prior to obtaining the concession licence. The assessment of reservoir filling covers safety, land stability and timing in relationship to other management activities. Issues relating to the preparation and filling of the reservoir are also covered in the ESIA, which gives particular attention to the clearing and restoration of riparian vegetation along the banks of the Romanche. Studies into reservoir sedimentation during the operation phase are being carried out by the University of Liège and are ongoing.

EDF is responsible for the impoundment of the reservoir and will undertake monitoring throughout the process. A 'Livet Impoundment Programme' includes a monitoring program, including the location and types of measurement to be made, and the areas to be covered by video surveillance. Monitoring will be carried out by visual inspection and through various technical measurements by teams which will be constantly present on site. Measurements will be taken using instruments on the dam, in its foundation and in the surrounding environment. Video surveillance will also be used to record the downstream environment and the gradient of the reservoir surface. Environmental monitoring will occur following impoundment, tracking potential impact on surrounding wetlands, streams and the riverbanks on a daily basis. Photographs will be used to observe the impact of changes over time.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of reservoir preparation and filling activities takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.*

Monitoring of reservoir preparation and filling activities will not begin for a number of years, however a monitoring program has been designed with the intention to identify inter-relationships and emerging risks. EDF's environmental monitoring programs have demonstrated the ability to account for new risks and opportunities that become evident during implementation and the same would be expected of the monitoring of reservoir preparation and filling.

EDF environmental specialists will include reservoir issues to be monitored in the 'journal of site environment' which is updated monthly.

Criteria met: Yes

19.2.2 Management

Analysis against basic good practice

Scoring statement: *Measures are in place to address identified needs during reservoir preparation and filling; and plans are in place to manage the reservoir and any associated issues for the operating hydropower facility.*

The 'Livet impoundment program', authored by CIH, sets out management measures for the preparation and filling of the reservoir. The plan outlines the principles of a provisional program for the work and the filling. The plans set out how preparation works will be organised on a day-to-day basis, including management responsibilities and requirements for meetings. Proposed interaction with external stakeholders is also detailed.

EDF has submitted a draft document for the first filling of the reservoir to DREAL, containing proposals for the duration of the filling, the control process, and emergency procedures, and are awaiting comments on this document.

Plans are not yet in place to manage the reservoir and any associated issues for the operating hydropower facility. However, this is not considered a significant gap, because of EDF's intention to prepare two plans, and the time available before impoundment to prepare them. These plans are: a regulatory document detailing when flushing can occur, the reservoir level, procedures for trash rack clearing, water quality requirements, dam maintenance and monitoring (all of which must be agreed with DREAL); and a flood procedure document, detailing operational guidelines to react to different flow conditions. The project will follow EDF's internal guidance document for the flushing of sediment from reservoirs.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

Processes are in place to anticipate and respond to emerging risks for the project which will apply to the reservoir preparation and filling operation. Throughout filling, the Livet Impoundment Program provides processes to anticipate and respond to emerging risks. The site will be regularly inspected by EDF site managers and environmental specialists to assess new risks arising. Site inspections will be discussed at weekly meetings and issues will be systematically addressed through subsequent meetings.

There is no process in place to anticipate and respond to emerging opportunities to improve reservoir preparation and filling. However interviews with stakeholders did not identify any opportunities that are being overlooked by EDF and it is too early to consider this a significant gap.

Criteria met: Yes

19.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: Processes and objectives in place for reservoir management have been and are on track to be met with no significant non-compliances or non-conformances, and reservoir management related commitments have been or are on track to be met.

It is too early to assess whether processes or objectives related to reservoir management are on track to be met, as reservoir preparation is yet to begin.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: In addition, there are no non-compliances or non-conformances.

Not relevant.

Criteria met: Yes

19.2.4 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

19.3 Scoring Summary

EDF has prepared well for the management of environmental issues that could occur in the reservoir area during project implementation. Assessment and planning for reservoir management for the operating hydropower facility is ongoing. Although impoundment will not occur for a number of years, the preparation and filling of the reservoir is on track to be effectively managed, taking into account construction, environmental and social management requirements, and maintenance issues.

Topic Score: 5

19.4 Relevant Evidence

Interview:	3, 14, 15, 18, 21, 24, 31, 38, 40
Document:	30, 34, 50, 51, 52, 53, 54, 55, 56, 100, 107, 138, 157, 159, 169, 170, 183, 201, 203, 210, 211, 212, 214
Photo:	Click here to enter text.

20 Downstream Flow Regimes (I-20)

This topic addresses the flow regimes downstream of project infrastructure during the project implementation stage. The intent is that flow regimes downstream of project infrastructure are planned and delivered with an awareness of and measures incorporated to address environmental, social and economic objectives affected by those flows.

20.1 Background Information

Before the European Water Framework Directive was implemented into law in France, the instream flow along the cascade development between the existing intake for the Livet, and the tailrace outlet for the Pierre Eybesse, power plants on the Romanche river was 0.9 m³/s. As a result of the implementation of the Directive, French law now prescribes that the downstream flow has to be, at a minimum, 10% of the annual flow, resulting in an average of 4 m³/s (the exact figure is 3.83 m³/s) being released past the Livet intake during both the present Implementation stage as well as after the new plant becomes operational.

This topic concerns all issues of downstream flows and the balance of environmental, social and economic objectives of the flow regime. Details of the impacts that flow management has on specific aspects are addressed in the respective topic, for example aquatic biodiversity in I-15 Biodiversity and Invasive Species, and public safety (affected by higher flows resulting from spilling excess water past the intake) on I-5 Infrastructure Safety.

20.2 Detailed Topic Evaluation

20.2.1 Assessment

Analysis against basic good practice

Scoring statement: *Issues in relation to flow regimes downstream of project infrastructure during the project implementation stage have been identified and assessed; and monitoring is undertaken to assess effectiveness of flow management measures or any emerging issues during project implementation.*

Ecological modelling was undertaken to assess the instream flow needs for the identified aquatic fauna, focussing on fish (see I-15). This assessment determined that a flow between 2 and 3.7 m³/s would be sufficient from an ecological point of view. The legal requirement (see above in Background) stipulates that the minimum average is 3.83 m³/s, simplified to 4 m³/s in project documentation. The assessment has also included an analysis of the opportunity to vary flow over the year, as long as the average satisfies the legally required 10% of average inflow. The resulting recommendation was to disregard the proposal to vary flow and retain a constant 4 m³/s, a decision which is supported by the local community which favours a constant flow because it facilitates safe recreational use of the river between the intake and tailrace of the new project.

During times of spilling, when the inflow is higher than the 41 m³/s design flow of the new plant or when the plant is required to be shut down, downstream flow will be higher. This has been assessed as part of the design of the new plant, resulting in the 'warning waves' approach described under I-5.

Flow is monitored by EDF and the data is publicly accessible on the internet at all times.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, monitoring of downstream flow issues takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.*

A requirement for hydro-biological monitoring for 40 years is included in the concession for the project. This will determine whether a flow of 4 m³/s is sufficient (less is not legally permissible) to satisfy the ecological requirements of the downstream ecosystem. Monitoring of downstream flow impact on aquatic ecology is addressed under I-15. There are no other identified inter-relationships, and no risks or opportunities have become evident during implementation.

Criteria met: Yes

20.2.2 Management

Analysis against basic good practice

Scoring statement: *In the case that a need to address downstream flow regimes has been identified, measures are in place to manage identified downstream flow issues; and where formal commitments have been made, these are publicly disclosed.*

Pre-project measures to release the required downstream flow have remained in place during the implementation stage and will remain in place through operation. The release of a minimum of 10% of the annual average flow (4 m³/s) is a regulatory requirement and is publicly disclosed.

This concurs with expressed stakeholder priorities. The local community favours a constant flow because it facilitates safe recreational use of the river between intake and tailrace of the new project.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, processes are in place to anticipate and respond to emerging risks and opportunities.*

Continuous publicly available hydrological monitoring serves as the process for identification of emerging risks. The main identifiable risk is that of a lack of inflow high enough to satisfy the minimum release. Hydrological analysis has been undertaken in order to ascertain that the regulatory requirement will be met at all times. The minimum inflow was calculated as 8 m³/s, safely allowing for continuous release of the required 4 m³/s.

There are no opportunities identified as the regulated flow is part of the concession and should not change.

Criteria met: Yes

20.2.3 Conformance / Compliance

Analysis against basic good practice

Scoring statement: *In the case that a need to address downstream flow regimes has been identified, processes and objectives in place to manage downstream flows have been and are on track to be met with no significant non-compliances or non-conformances, and downstream flow related commitments have been or are on track to be met.*

The regulatory commitment to release 4 m³/s past the intake at Livet is met, thereby complying with French law and the Water Framework Directive and EDF's commitments.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In addition, there are no non-compliances or non-conformances*

There are no non-compliances or non-conformances.

20.2.4 Outcomes

Analysis against basic good practice

Scoring statement: *In the case that a need to address downstream flow regimes has been identified and commitments to downstream flow regimes have been made, these take into account environmental, social and economic objectives, and where relevant, agreed transboundary objectives.*

The flow regime of 4 m³/s, constant unless inflows exceed the 41 m³/s design flow of the new plant, takes into account implications for generation, aquatic ecosystems, safety and recreation. Economic considerations would favour a lower flow in order to reduce generation losses, and this is permissible according to the ecological studies. Social considerations favour a constant flow, high enough to provide recreational opportunities and an aesthetically pleasing river environment.

However, a constant flow of 4 m³/s is required by the concession.

There are no transboundary aspects in the Romanche river.

Criteria met: Yes

Analysis against proven best practice

Scoring statement: *In the case that a need to address downstream flow regimes has been identified and commitments to downstream flow regimes have been made, in addition these represent an optimal fit amongst environmental, social and economic objectives within practical constraints of the present circumstances.*

The commitment to a downstream flow regime of a constant 4 m³/s is an optimal fit within the practical constraint of the regulatory requirement.

The economic priority is obviously on maximum generation, i.e. the lowest possible instream flow between intake and outlet. A lower flow than the 4 m³/s would be permissible on ecological grounds, but unacceptable from a recreational and aesthetic point of view.

Criteria met: Yes

20.2.5 Evaluation of Significant Gaps

Analysis of significant gaps against basic good practice

There are no significant gaps against basic good practice.

0 significant gaps

Analysis of significant gaps against proven best practice

There are no significant gaps against proven best practice.

0 significant gaps

20.3 Scoring Summary

The downstream flow regime has been assessed by appropriate expertise in a hydro-biological study and consultations have determined stakeholder priorities.

This flow regime in the concession is, however, determined by a legal requirement stipulating that an average of, at a minimum, 10% of average flow is released past the intake structure.

The downstream flow during the implementation stage, being governed by law, is identical to that present in the river prior to construction and to that required during the operation stage. It is an optimal fit within the practical constraint of the regulatory requirement.

There are no gaps against proven best practice, resulting in a score of 5.

Topic Score: 5

20.4 Relevant Evidence

Interview:	8, 15
Document:	50-56, 154
Photo:	None

Appendix A: Written Support of the Project Developer



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Hydraulique

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Executive Director
International Hydropower Association (IHA)
Nine Sutton Court Road Sutton
London SM1 4SZ, United Kingdom

WRM :

NRÉL : 5023 – JFAUV – 06/2013

Interlocuteur :

Objet : IHA Sustainability Protocol Assessment – Romanche Gavet project

Saint-Denis, 16 April 2013

Dear Sir,

Electricité de France (EDF) is aware that IHA will be conducting an audit of matters surrounding the negotiation of participation arrangements and consultations with stakeholders pertaining to the development of the Romanche Gavet hydropower project on behalf of EDF.

This letter confirms that EDF is fully supportive of this assessment and intends to cooperate fully with the assessors.

We look forward to reviewing your report.

Yours truly,

Jean-François ASTOLFI
Senior Vice President
Hydropower Generation and Engineering

Appendix B: Verbal Evidence

Ref.	Interviewee (NAME, first name, position)	Organisation	Department	Date	Location	Lead interviewer
1	BEGIC Ivan, Safety Inspector	DREAL	Infrastructure Safety for Hydropower	10 June 2013	Grenoble	SMITH Doug
2	LUQUET Bruno, Working Condition inspector	DREAL	Infrastructure Safety for Hydropower	10 June 2013	Grenoble	RYDGREN Bernt
3	GAUDRON Paul, Gavet Construction Project Manager (MOE)	EDF	CIH	10 June 2013	Gavet	HOWARD Simon
4	SCHMIDGEN-BENAUT Helene, Head of Unit	ABF		11 June 2013	Gavet	SMITH Doug
5	THOUIN Eric, Head of Hydro Procurement	EDF	DA (Direction des Achats)	11 June 2013	Gavet	SMITH Doug
6	STRAPPAZZON Gilles, President of Council	CG38		11 June 2013	Gavet	RYDGREN Bernt
7	GAUDRON Paul, Gavet Construction Project Manager (MOE)	EDF	CIH	11 June 2013	Gavet	SMITH Doug
8	DECOUT Fabrice, DELPRAT Michel	ONEMA		11 June 2013	Gavet	RYDGREN Bernt
9	MATHURIN Jean-Pierre, Vice-President	AAPPMA		11 June 2013	Gavet	RYDGREN Bernt
10	CROSNIER Jérôme, Head of Unit	DREAL	Aquatic Habitats/ Environment and Hydropower	11 June 2013	Visio (Paris-Gavet)	RYDGREN Bernt
11	CAYOL-GERIN Anne, Head of Patrimonial/ Cultural Heritage	CG38		12 June 2013	Grenoble	SMITH Doug
12	LAGHOUATI Beni, Security Manager, BLAIN Pascal, CISSCT representative	SPIE		12 June 2013	Gavet	RYDGREN Bernt
13	JACQUET, M.	Resident of Gavet		12 June 2013	Gavet	RYDGREN Bernt
14	JACOB Frédéric, Environmental Expert	EDF	CIH	12 June 2013	Gavet	HOWARD Simon
15	LANDRU Bruno, Environmental Expert	EDF	CIH	12 June 2013	Gavet	RYDGREN Bernt

16	MICHALEWSKI Jacques, Decommissioning Project Manager (MOE)	EDF	CIH	12 June 2013	Gavet	SMITH Doug
17	MICHALEWSKI Jacques, Decommissioning Project Manager (MOE)	EDF	CIH	12 June 2013	Gavet	RYDGREN Bernt
18	MICHALEWSKI Jacques, Decommissioning Project Manager (MOE)	EDF	CIH	12 June 2013	Gavet	HOWARD Simon
19	HOMBROUCK Laurent, Decommissioning Expert	GC Conseil		12 June 2013	Gavet	SMITH Doug
20	HOMBROUCK Laurent, Decommissioning Expert	GC Conseil		12 June 2013	Gavet	RYDGREN Bernt
21	HOMBROUCK Laurent, Decommissioning Expert	GC Conseil		12 June 2013	Gavet	HOWARD Simon
22	GALLAND Jean-Charles, Head of Development	EDF	DPIH	12 June 2013	Visio (Paris-Gavet)	SMITH Doug
23	YAZBEK Catherine, Head of Communication	EDF	DPIH	12 June 2013	Gavet	RYDGREN Bernt
24	VALETTE Eric, Civil Work Expert	EDF	CIH	12 June 2013	Gavet	HOWARD Simon
25	PEVET Olivier, Safety Protection Health Coordinator, LUNEUT Philippe, Safety Protection Health Coordinator	APAVE		12 June 2013	Gavet	RYDGREN Bernt
26	GAUDRON Paul, Gavet Construction Project Manager (MOE)	EDF	CIH	12 June 2013	Gavet	RYDGREN Bernt
27	DEWALLS Benjamin, PIROTTON Michel, Consultants on sedimentation, erosion, safety	Université de Liège	Joint research program on Gavet HPP	12 June 2013	Visio (Liège - Gavet)	HOWARD Simon
28	BRANCHE Emmanuel, Senior Economist Engineer	EDF	CIH	12 June 2013	Gavet	SMITH Doug
29	GUERIN Caroline, President, ALLIBERT M., Member, STRAPPAZZON. M, Member	Association Patrimoine Romanche		12 June 2013	Gavet	SMITH Doug
30	BOUDINET Guy, Vice Mayor, and BAILLY-MAITRE Marie-Christine, Head of the Museum	Gavet's Municipality / Riouperoux Museum		12 June 2013	Gavet	SMITH Doug

31	BAUD Florent, Romanche-Gavet Project Manager (MOA)	EDF	UP Alpes	12 June 2013	Gavet	HOWARD Simon
32	HUEBER-PAYSANT Véronique, Site Doctor and CISSCT representative	SPS		13 June 2013	Grenoble	RYDGREN Bernt
33	ANDRAUD Sylvain, Risk Production Engineer, AIG, and GARNIER Benoit, EDF Deputy Head of Insurance Division	AIG / EDF		13 June 2013	Visio (Paris-Gavet)	SMITH Doug
34	CATALON Anne	SIERG		13 June 2013	Gavet	HOWARD Simon
35	JAMEAU Laura, Project Manager	Conservatoire d'Espaces Naturels Isère - Avenir		13 June 2013	Saint Egreve	HOWARD Simon
36	BAUD Florent, Romanche-Gavet Project Manager (MOA)	EDF	UP Alpes	13 June 2013	Gavet	SMITH Doug
37	TRAUTMANN David, Project Manager	Agence de l'Eau Rhône-Méditerranée-Corse		13 June 2013	Gavet	HOWARD Simon
38	PELOUTIER Vincent, Civil Work Expert	EDF	CIH	13 June 2013	Gavet	SMITH Doug
39	DEVILLE Florian, CISSCT representative	VCT		13 June 2013	Gavet	RYDGREN Bernt
40	MARTY Guy, QHSE Manager for Gavet	EDF	CIH	13 June 2013	Gavet	HOWARD Simon
41	BAUD Florent, Romanche-Gavet Project Manager (MOA)	EDF	UP Alpes	13 June 2013	Gavet	RYDGREN Bernt
42	MENEU Francis, President, FOGLAR Hélène	FRAPNA	(Environmental NGO)	13 June 2013	Gavet	HOWARD Simon
43	CHIAPPA Thierry, Project Manager	Alstom		14 June 2013	Grenoble	SMITH Doug
44	M'SAKNI Fehmi, Site Employee and CISSCT representative	CBR		14 June 2013	Gavet	RYDGREN Bernt
45	VERPILLOT Aurelia, Head of Mission Locale	Mission Locale		14 June 2013	Gavet	RYDGREN Bernt
46	CAMPOY Aurélie, Project Manager	CLE		14 June 2013	Vif	HOWARD Simon
47	MALECOT Emmanuel, Site Director	Vinci		14 June 2013	Gavet	RYDGREN Bernt

Appendix C: Documentary Evidence

Ref.	Author/organisation	Title	Year	Language	Description
1	EDF	Pièce 14 - Gavet	2008	Français	Monitoring and security of Gavet. It also mentions the EDF experience as a designer and an operator of HPPs, including the Romanche. This is therefore a commitment of EDF
2	Préfet Isère	Pièce 16 - Gavet	2008	Français	Water regulation, as well as monitoring and security of Gavet. This water regulation establishes the operation conditions of Gavet
3	BIOTEC	Génie végétal - plan 1	2009	Français	Map of Biotec study
4	BIOTEC	Génie végétal - plan 2	2009	Français	Map of Biotec study
5	BIOTEC	Génie végétal - plan 3	2009	Français	Map of Biotec study
6	BIOTEC	Génie végétal - plan 4	2009	Français	Map of Biotec study
7	BIOTEC	Génie végétal - plan 5	2009	Français	Map of Biotec study
8	EDF	INSTRUCTION CENTRALE DE GRAND'MAISON CONDUITE A TENIR EN CAS D'INTRUSION	2007	Français	Example of procedures during operation relevant to infrastructure safety (Grand Maison)
9	EDF	INSTRUCTION PLAN INTERNE INONDATION DE L'USINE DE GRAND'MAISON	2011	Français	Example of procedures during operation relevant to infrastructure safety (Grand Maison)
10	EDF	INSTRUCTION CENTRALE DE GRAND'MAISON PLAN INTERNE INCENDIE	2007	Français	Example of procedures during operation relevant to infrastructure safety (Grand Maison)
11	EDF	Valorisation économique de la chute de Gavet dans le cadre de l'avant projet détaillé, note économique	2011	Français	Explanation of operation costs of Gavet's HPP

12	EDF	Rapport de performance de projet (EXCEL extract)	2013	Français	Project Performance Report (data sheet for an example) - n°1
13	EDF	Rapport de performance de projet (EXCEL extract)	2013	Français	Project Performance Report (data sheet for an example) - n°2
14	EDF	Procedure for using the Project Performance Report (PPR) by Strategic Controlling – Project Investment Control Department	2012	English	User manual of PPR
15	EDF	IPODE Declinaison DPIH	2011	Français	Description of the control process of the project within EDF's corporate financial management system and financial controls
16	EDF	EDF management processes are in place to ensure corporate commitments and policies are embedded at project level: focus EDF/DPIH/CIH EDF management processes are in place to ensure corporate commitments and policies are embedded at project level	2013	English	Management system of CIH and explanation on how corporate procedures are embedded at the Gavet's project level
17	EDF	Agenda Directoire January 23rd 2013	2013	Français	Presentation of the agenda and evidence that Cost and timing are part of the discussions
18	EDF	Agenda COPIL December 10th 2012	2012	Français	Presentation of the agenda and evidence that Cost and timing are part of the discussions
19	EDF	EDF CORPORATE RESPONSIBILITY COMMITMENTS	2013	English	EDF Corporate Responsibility 11 commitments
20	UN GC	EDF: Criteria for the Global Compact Advanced level 2011	2012	English	This document provides answers and illustrations to meet the 24 criteria required for the GC advanced level by referring to the EDF website (www.edf.com) and especially to the pages dedicated to the on-line sustainability report 2011 which is part of the EDF COP 2011(http://rapport-dd-2011.edf.com) in French
21	EDF	AGREEMENT ON EDF GROUP CORPORATE SOCIAL RESPONSIBILITY	2009	English	EDF Group CSR Agreement – 2009

22	ILO	Global Report under the follow-up to the ILO Declaration on Fundamental Principles and Rights at Work 2010	2010	English	Evidence that EDF follows ILO rules, especially for child labour
23	EDF	LOTUS NOTES Data Base dedicated to the Romanche-Gavet's project	2013	Français	Example of the database that is dedicated to Romanche-Gavet's project, and managed by Project managers
24	EDF	Carte des parties prenantes (Stakeholder mapping) Project Romanche-Gavet	2013	Français	Last updated version of the stakeholder mapping (CONFIDENTIAL)
25	EDF	Pièce 3.5 "Exigences environnementales" (table des matières)		English	Translation of the Table of Contents of the piece 3.5
26	AFNOR	Audit du Système de Management de CIH Centre d'Ingénierie Hydraulique - Réunion de clôture	2013	Français	Conclusion of the audit ISO 14001
27	CITGCB	Obligations du responsable de l'ouvrage vis à vis d'un barrage de classe C	2011	Français	Requirements of dam operator type C
28	EDF	Localisation des ouvrages du nouvel aménagement	2006	Français	Map of new Gavet
29	EDF	Chutes de la moyenne Romanche	2006	Français	Map of existing HPPs on Romanche
30	EDF	Preparation of the assessment of Romanche-Gavet with IHA-HSAP	2013	English	Presentation by Emmanuel BRANCHE of the Romanche-Gavet's project prior to the assessment week for assessors
31	EDF	Directive DPIH - Table des matières traduite en anglais	2013	Français	English translation of the ToC of the DPIH Directive on coordination of health and safety issues at work, and risks management
32	MOSAIQUE ENVIRONNEMENT	Plan de Gestion de l'Ile Falcon - Pont de Gavet ; Rapport d'étude MOSAIQUE ENVIRONNEMENT / traduction de la table des matières	2013	English	English translation of the ToC of the Management Plan "Gavet Ile Falcon"
33	ESPACE GAIA	Etude pour la déconstruction des centrales de la Romanche / traduction de la tables des	2013	English	English translation of the ToC of the study "espace Gaia"

		matières			
34	EDF	Civil Work monitoring plan (2009) Hydro Safety monitoring plan (2013) Security monitoring plan (2013) Environmental monitoring plan (2013)	2013	English	Translation of the Table of Contents of monitoring plans (civil works, hydro safety, security, environmental)
35	KARUM ACTION NATURE	Dossier CNPN / traduction de la table des matières	2011	English	Translation of the Table of Contents of CNPN document
36	EDF	EDF Group Financial Report 2012	2013	English	
37	EDF	EDF GROUP CORPORATE SUSTAINABLE DEVELOPMENT POLICY	2010	English	
38	EDF	THE SUSTAINABLE DEVELOPMENT CHARTER BETWEEN EDF SA AND ITS SUPPLIERS	2006	English	
39	EDF	EDF Group Code Of Ethics	2013	English	
40	EDF	Organisation of the Romanche-Gavet	2013	English	2 slides explanation of the organisation of the HPP
41	EDF	Security passport for Romanche-Gavet	2013	English	Translation of the security passport
42	APAVE, EDF, CBR, SPIE, MT38, OPPBTP, Carsat	Charte accueil sécurité	2012	Français	Charta for security signed by all stakeholders
43	EDF	Organigramme DPIH	2013	Français	Organogram DPIH
44	EDF	EDF CIH Organogram CIH (1st January 2013)	2013	English	
45	EDF	Rapport d'activité et de développement durable 2012 du Groupe EDF	2013	Français	Activity report and sustainable development report 2012
46	EDF	Special Terms and Conditions of Purchase (Social clause)		English	translation of the social clause 18.2

47	DREAL	Organigramme DREAL Rhône-Alpes 2013	2013	Français	Organogram DREAL Rhône Alpes 2013
48	WBCSD	Five principles for meaningful engagement with our stakeholders	2013	English	EDF is one of the co-chair of this repory
49	EDF	Translation of the table of contents of E&S Study	2013	English	10-E&Sstudies/English translation of the Table of Contents E&S study (Year 2009)
50	EDF	E&S 1ère partie : ANALYSE DE L'ETAT INITIAL	2009	Français	10-E&Sstudies/Part 1 - E&S study for concession (year 2009)
51	EDF	E&S 2ème partie : ANALYSE DES EFFETS SUR L'ENVIRONNEMENT (EFFETS DIRECTS ET INDIRECTS, TEMPORAIRES ET PERMANENTS)	2009	Français	10-E&Sstudies/Part 2 - E&S study for concession (year 2009)
52	EDF	E&S 3ème partie : LES RAISONS DU CHOIX DU PROJET	2009	Français	10-E&Sstudies/Part 3 - E&S study for concession (year 2009)
53	EDF	E&S 4ème partie : ETUDE DES MESURES ENVISAGEES POUR SUPPRIMER, REDUIRE ET SI POSSIBLE COMPENSER LES CONSEQUENCES DOMMAGEABLES DU PROJET	2009	Français	10-E&Sstudies/Part 4 - E&S study for concession (year 2009)
54	EDF	E&S 5ème partie : METHODES UTILISEES POUR EVALUER LES EFFETS DU PROJET SUR L'ENVIRONNEMENT ET LES DIFFICULTES RENCONTREES	2009	Français	10-E&Sstudies/Part 5 - E&S study for concession (year 2009)
55	EDF	E&S 6ème partie : DEMANTELEMENT des chutes de l'aménagement MOYENNE ROMANCHE	2009	Français	10-E&Sstudies/Part 6 - E&S study for concession (year 2009)
56	EDF	ETUDE D'IMPACT - Résumé non technique	2009	Français	10-E&Sstudies/Non technical summary E&S studies for concession (2009)
57	EDF	EDF Board of Directors Executive Committee (2013)	2013	English	

58	EDF	EDF CIH Organogram CIH (1st January 2013)	2013	English	
59	EDF	EDF DPIH Organogram CIH (15th May 2013)	2013	English	
60	EDF	EDF hydro Division Organisation Schematic	2013	English	
61	EDF	EDF Organisational charts	2013	English	
62	EDF	Communication : Revue de l'année 2012 et perspectives 2013	2013	Français	2012 year review and 2013 perspectives for communication (2013)
63	EDF	Plan de communication initial	2011	Français	Initial communication plan
64	EDF	Plan de communication sur la période 2011-2018	2011	Français	Communication plan over the period 2011-2018
65	EDF	EDF Romanche Energies N13	2013	Français	
66	Dauphiné Libéré	Article du Dauphiné dédié à la création de l'association Patrimoine Romanche	2013	Français	Article for the creation of the association Patrimoine Romanche
67	Dauphiné Libéré	Le chantier de Livet-Gavet avance à grands pas	2013	Français	Events that made 2012 in Oisans
68	Dauphiné Libéré	Le chantier de Gavet : plus grand chantier de France	2012	Français	Gavet is the biggest construction site of HPP in France
69	Dauphiné Libéré	La diversion temporaire de la Romanche pour le nouveau chantier de Gavet	2012	Français	Temporary diversion of Romanche
70	Dauphiné Libéré	Le tunnelier Rosali est sur le site !	2012	Français	Rosali TBM is on site
71	EDF	Flyer des journées portes ouvertes du 27 & 28 avril 2013	2013	Français	Open day 27-28 April 2013 flyer
72	EDF	Document pour la mairie des journées portes ouvertes du 27 & 28 avril 2014	2013	Français	Open day 27-28 April 2013 for municipality
73	EDF	Information sur la Réunion publique du 16 avril	2013	Français	Information sheet for the Public meeting of 16 April 2013 dedicated to decommissioning

		2013			
74	EDF	Documents préparatoire pour la présentation lors de la Réunion publique du 16 avril 2014	2013	Français	Presentation during the Public meeting of 16 April 2013 dedicated to decommissioning
75	EDF	Brochure RSE EDF	2010	Français	Corporate social responsibility EDF
76	EDF	Rapport d'activité et de développement durable 2011 du Groupe EDF	2011	Français	EDF activity and sustainable development report year 2011
77	EDF	Politique développement durable du Groupe EDF	2010	Français	Corporate sustainable development policy
78	EDF	EDF Group Corporate Responsibility Commitments May 2013	2013	English	
79	EDF	EDF reference document	2012	English	
80	EDF	Indicateur développement durable du Groupe EDF	2011	Français	Sustainable development indicator EDF
81	EDF	Organisation générale du projet Gavet	2013	Français	Global organisation of Romanche-Gavet's project
82	EDF	Rapport d'activité et de développement durable 2011 du Groupe EDF	2013	Français	EDF activity and sustainable development report year 2013
83	EDF	Etude EDF sur le diagnostic des chauves-souris	2012	Français	Bats study
84	CNPN	Document sur la biodiversité	2011	Français	CNPN document on biodiversity
85	EDF	Translation in English of the table of contents of the CNPN study	2013	English	
86	GC Conseil	Etude de la pollution des sols et du béton	2012	Français	Study of the soil & concrete pollution
87	EDF	Suivi de la qualité des sols	2011	Français	Study of the soil quality
88	GC Conseil	Design de la passe à poissons et renaturation des berges	2013	Français	Design of the fish pass and renaturation of the riverbanks

89	GC Conseil	Pollution associée aux ouvrages hydroélectriques de la Romanche	2012	Français	Pollution on hydro assets
90	MOSAIQUE ENVIRONNEMENT	Etude faune-flore- habitats naturels	2013	Français	Fauna-flora-environmental habitats
91	GAY	Etude sur la caractérisation hydrobiologique et physico-chimique de la Romanche	2013	Français	Hydrobiological & physico-chemical characterisation of the Romanche river Study Gay
92	GAY	Liste des paramètres généralement analysés lors du nettoyage des canaux	2012	Français	List of parameters commonly analysed during cleaning of canals
93	EDF	Canevas de l'étude sociale (démantèlement)	2013	Français	Social study canevas for the decommissioning
94	EDF	Plan de gestion du génie civil	2012	Français	Civil work monitoring plan
95	EDF	Compte-rendu du COVAP de février 2013 sur le démantèlement	2013	Français	Minutes of the COVAP meeting dedicated to decommissioning
96	EDF	Présentation du démantèlement lors du COVAP	2013	Français	Decommissioning presentation during COVAP
97	EDF	Présentation du démantèlement lors du COPIL	2012	Français	Decommissioning presentation during COPIL
98	EDF	Analyse de risques du démantèlement	2013	Français	Risk analysis of decommissioning
99	AIG	Rapport de l'assureur suite à sa visite en janvier 2013	2013	Français	Report of AIG insurer for the January 2013 visit
100	EDF	Plan de gestion environnemental	2013	Français	Environmental management plan
101	EDF	Plan de gestion de la sûreté hydraulique	2013	Français	Hydro safety management plan
102	EDF	English translation of the table of contents of all management plans	2013	English	
103	EDF	Note de spécification de l'exploitation	2012	Français	Operating specification notes
104	EDF	Plan de gestion sécurité	2013	Français	Security safety management plan
105	EDF	Plan de gestion topographique	2011	Français	Topographic management plan

106	EDF	Plan de gestion topographique 2	2011	Français	Topographic management plan 2
107	Campenon Bernard	CRHA (Compte Rendu Hebdomadaire d'Activité)	2013	Français	Weekly Activity Report by Campenon Bernard to EDF
108	SPIE	CRHA (Compte Rendu Hebdomadaire d'Activité)	2013	Français	Weekly Activity Report by SPIE to EDF
109	EDF	Carnet de chantier mars 2013	2013	Français	Worksite document (status March 2013)
110	EDF	Rapport sûreté hydroélectricité 2012	2013	Français	EDF Safety hydro report 2012
111	EDF	EDF Financial document 2012	2013	English	
112	EDF	Information on the financial viability	2013	English	information relative to this item in a Word document
113	Municipality / EDF	Convention pour le transfert du pont Les Ponants à la mairie	2012	Français	Contract to transfer Les Ponants bridge to the Gavet's municipality
114	EDF	Lutte contre la fraude à EDF	2010	Français	Fighting fraud at EDF
115	Espace Gaia	Etude espace Gaïa - collecte de données et préparation	2011	Français	Espace Gaïa study (data collection and preparation)
116	Espace Gaia	Etude espace Gaïa - renaturation	2012	Français	Espace Gaïa study (renaturation)
117	Mosaïque Environnement	Plan de Gestion - Gavet et l'Île Falcon - Rapport	2013	Français	Managing & monitoring plan Ile Falcon & Gavet
118	APAVE	Contrat pour un coordonnateur QSSE plein temps	2010	Français	Contract for a coordinator QHSE
119	EDF	Décision pour un coordonnateur QSSE à temps plein	2010	Français	Full time QSSE coordinator
120	EDF	Dictionnaire des termes sécurité/sûreté	2011	Français	Dictionary of terms used on safety/security
121	EDF	Feuille de route DPIH sur la période 2011-2013 en termes de sécurité et santé au travail	2011	Français	DPIH Roadmap for security/safety & health on the 2011-2013 period

122	EDF	Décision du PDG d'EDF sur la santé sécurité	2012	Français	EDF CEO decision on safety & health
123	EDF	Procédures santé sécurité à la DPIH	2013	Français	Health & safety procedures at DPIH
124	EDF	English translation of the table of contents of DPIH H&S procedures	2013	English	
125	EDF	Memento santé et sécurité DPIH	2010	Français	H & S memento for DPIH
126	EDF	Politique des conditions de travail à EDF SA	2009	Français	Labour conditions policies at EDF SA
127	EDF	Lettre du Directeur de la DPIH sur les enjeux sécurité	2011	Français	Letter of the Director DPIH on security issues
128	EDF	Création du passeport sécurité	2012	Français	Creation of the security pass
129	EDF	Security pass explanation	2013	English	
130	EDF, & all	Charte du passeport sécurité	2012	Français	Charter of the security pass
131	EDF & all	Explications du passeport sécurité	2012	Français	Explanation of the security pass
132	CG38	Lettre du Conseil Général pour la création du comité de réflexion sur le devenir du patrimoine industriel de la vallée de la Manche	2008	Français	Letter of CG38 for the creation of the committee cultural heritage of Romanche
133	CG38	Courriel du Conseil Général avec une invitation pour une réunion le 2 juillet 2012 à la MRE sur le thème du Patrimoine	2012	Français	CG38 Email for a meeting at Maison Romanche Energies on 2 July 2012 dealing on cultural heritage
134	EDF	Présentation de la démarche "patrimonial" du projet Gavet par EDF lors de la réunion du 2 juillet 2012	2012	Français	EDF presentation of the cultural heritage approach during the 2 July 2012 meeting
135	CG38	Compte rendu de la réunion du 2 juillet 2012	2012	Français	CG38 minutes of 2 July 2012 meeting
136	GC Conseil	Franchissabilité piscicole (phase démantèlement des centrales)	2013	Français	For the decommissioning stage, fish passability study

137	ICF Environnement	CARACTERISATION DE L'ETAT DU MILIEU EAUX SOUTERRAINES Centrale hydroélectrique de Rioupéroux (38)	2012	Français	Characterization of the state of groundwater closed to existing HPPs on Romanche
138	GC Conseil	PROPOSITION ORGANISATION DOCUMENTAIRE DOSSIER APS	2013	Français	Table of contents of the detailed studies for decommissioning of HPPs on Romanche
139	EDF	Processus 9000 - SUPPORT/ACHATS - Règles générales d'achat	2012	Français	General procurement rules for CIH
140	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2011	Français	Minutes of decommissioning of the HPPs on the Romanche
141	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2011	Français	Minutes of decommissioning of the HPPs on the Romanche
142	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2011	Français	Minutes of decommissioning of the HPPs on the Romanche
143	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2012	Français	Minutes of decommissioning of the HPPs on the Romanche
144	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2012	Français	Minutes of decommissioning of the HPPs on the Romanche
145	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2012	Français	Minutes of decommissioning of the HPPs on the Romanche
146	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2012	Français	Minutes of decommissioning of the HPPs on the Romanche
147	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2012	Français	Minutes of decommissioning of the HPPs on the Romanche
148	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2012	Français	Minutes of decommissioning of the HPPs on the Romanche
149	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2012	Français	Minutes of decommissioning of the HPPs on the Romanche

150	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2013	Français	Minutes of decommissioning of the HPPs on the Romanche
151	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2013	Français	Minutes of decommissioning of the HPPs on the Romanche
152	EDF	Compte rendu du projet démantèlement des ouvrages sur la Moyenne Romanche	2013	Français	Minutes of decommissioning of the HPPs on the Romanche
153	EDF	Planning du projet démantèlement des ouvrages sur la Romanche	2013	Français	Planning of HPP decommissioning on the Romanche
154	Lepteau SA	Rivière Romanche (38) détermination du débit à réserver	200	Français	Evaluation of the environmental flow of the Romanche river (38)
155	EDF	Etude des potentialités piscicoles du torrent du Bâton et propositions d'actions	2012	Français	Opportunities upstream the Livet's dam
156	EDF	Compte rendu de la rencontre CIH/ ONEMA/Fédération pêche 38 du jeudi 1er avril 2010	2010	Français	Minutes of meeting between CIH / ONEMA / Fédération de pêche for opportunities associated with the project
157	EDF	Chute de GAVET – Dossier d'exécution – Ouvrages principaux - Notice d'incidence environnementale	2010	Français	Main works environmental study for dossier d'exécution
158	EDF	Visite QSSE	2012	Français	QHSE visit
159	EDF	Projet GAVET – Dossier d'exécution - Accès - Notice d'incidences environnementales	2010	Français	Access environmental study for dossier d'exécution
160	EDF	GAVET - Demande d'autorisation d'une installation de stockage de déchets inertes Site de Livet	20	Français	Request for storage of non-critical waste associated with Gavet's project
161	EDF	Projet : Projet GAVET – Dossier de demande d'autorisation de défrichement - Notice		Français	

		d'impact			
162	DREAL	Compte rendu DREAL de la réunion sur les aspects sécurité/sûreté des travaux de Gavet	2011	Français	Minutes of the meeting EDF/DREAL concerning infrastructure safety. --> OK
163	Campenon Bernard	Fiche de non-conformité sur l'enrobage du sommier	2013	Français	Example of a non-compliance of work during implementation with Campenon Bernard
164	EDF	Note d'organisation du projet	2013	Français	Organisation document of the project
165	EDF	DOSSIER DE CONSULTATION - PIECE 3.5 - PRESCRIPTIONS EN MATIERE DE QUALITE, SECURITE & ENVIRONNEMENT - EXIGENCES ENVIRONNEMENTALES	2010	Français	QHSE - Environmental requirements in the tendering process
166	EDF	Registre des déchets sortants	2013	Français	Waste Monitoring Register
167	EDF	Visite QSSE	2013	Français	QHSE visit
168	EDF	Réunion hebdomadaire de chantier – Semaine 22 Année 2013	2013	Français	Weekly meeting on site for construction
169	EDF	Rapport mensuel d'avancement du projet Romanche-Gavet à fin mai 2013	2013	Français	Monthly report during the implementation (end of May 2013)
170	EDF	Analyse de risques du projet Gavet	2011	Français	Risk analysis of Gavet's HPP
171	EDF	Lettre d'envoi à la DREAL pour le programme de mise en eau	2011	Français	Letter to DREAL for the impoundment of the reservoir
172	APAVE	CISSCT 18 Juin 2013	2013	Français	CISSCT 18 June 2013
173	APAVE	CISSCT 26 mars 2013	2013	Français	CISSCT 23 March 2013
174	Campenon Bernard	Plan d'assurance environnemental	2012	Français	Campenon Bernard's Environmental insurance plan for Gavet's HPP during implementation

175	EDF	EOTP pour le projet Gavet	2013	Français	This is the description of the different lots that have been created and organised for Gavet's HPP, based on fiscal issues ; they are incorporating at EDF Corporate level
176	EDF	EOPT organisation for Gavet	2013	Français	Items are splitted for this Gavet's project
177	EDF	Suivi des avancements du projet Gavet	2013	Français	
178	EDF	Courbes pondérées Gavet (état mai 2013)	2013	Français	May 2013 status of Gavet's project (curve)
179	EDF	Programme général de référence du CIH sur le projet Gavet	2013	Français	Main works program of CIH for Gavet's project
180	EDF	Table d'avancement du projet Gavet (état mai 2013)	2013	Français	May 2013 status of Gavet's project (table)
181	EDF	Courbes pondérées globales du projet Gavet (état mai 2013)	2013	Français	May 2013 status of Gavet's project overall vision (curve)
182	EDF	Analyse des risques projet pour la phase réalisation de l'Aménagement de Romanche-Gavet	2011	Français	Risk analysis of Gavet's HPP during implementation
183	EDF	Tableau des risques du projet Gavet	201	Français	Risk analysis table
184	EDF	ENLEVEMENT DES INSTALLATIONS DE CHANTIER ET REPLIEMENT DES OUTILLAGES		Français	Site restoration document
185	EDF	Insertion chantier (état avril 2013)	2013	Français	Monitoring sheet for working site conditions (expectation and realisation)
186	EDF	Registre de suivi des déchets sortants	2013	Français	Monitoring sheet for waste
187	EDF	PLANIFICATION ET SUIVI DES CONTRÔLES DE LA QUALITE DES EAUX D'EXHAURE	2013	Français	Monitoring sheet for water quality
188	SPIE	MESURES DES POUSSIÈRES	2012	Français	Monitoring sheet for dust (air quality)
189	SPIE	MESURES DU BRUIT	2012	Français	Monitoring sheet for noise

190	SPIE	MESURES VOLUMIQUES DU RADON 222 ET DE L'ENERGIE ALPHA POTENTIELLE	2012	Français	Monitoring sheet for Radon 222
191	EDF	Organigramme du CIH pour le projet Gavet	2013	Français	CIH Organogram of the project
192	EDF	Lettre pour les habitants des Ponants durant la procédure du tir de mine	2012	Français	Letter to inhabitants of les Ponants (explanation of procedures during blasting)
193	EDF	Tableau de suivi du montant dédié aux entreprises locales	2012	Français	List of contracts to local contractors
194	EDF	Compte rendu de la réunion mensuelle travaux (3 juin 2013)	2013	Français	Minutes of meeting (monthly)
195	EDF	Compte rendu de la réunion hebdomadaire de chantier (semaine 15 année 2013)	2013	Français	Minutes of meeting (weekly)
196	SPIE	Procédure travaux et additifs PPSPS - Procédure de transfert du tunnelier Lilorosa	2013	Français	Example of execution procedures (example of transfert of Lilorosa TBM)
197	EDF	Programme de mise en eau	2011	Français	Reservoir filling
198	AFNOR	Rapport d'audit définitif (EDF - CIH - Audit de suivi 2 - référentiels : ISO14001 & ISO9001 - date de l'audit : 26/03/13 - 28/03/13)	2013	Français	Final audit report (ISO 9001 & ISO 14001 26 March to 28 March 2013)
199	AFNOR	Constats de l'audit	2013	Français	Audit different item relevant
200	AFNOR	Réunion de clôture - Audit du Système de Management de CIH Centre d'Ingénierie Hydraulique	2013	Français	Presentation of the first results/conclusions of the audit at the end of the assessment week
201	EDF	Visite QSSE (aspect environnement)	2012	Français	Environmental issue relevant to contractors (environmental visit)
202	SPIE	Test et validation des instructions Simulation d'urgence environnementale	2012	Français	Environmental simulation in case of emergency (test & validation)

203	SPIE	Plan d'assurance environnemental de SPIE, et son organisation associée	2012	Français	SPIE Environmental management plan (& organisation note)
204	EDF	Test de Situation d'Urgence (canevas)		Français	Draft plan for the emergency situation test
205	EDF	Capture d'écran du système de management	2013	Français	Screen shot of management system tree
206	EDF	Etude de l'accident de M. BOUACIDA	2013	Français	Analysis of the accident
207	EDF	Fiche technique d'accident	2013	Français	technical sheet of the accident
208	EDF	Analyse de l'accident	2013	Français	Analysis of the accident
209	EDF	Fiche TEP (Traitement d'Événement ou de Progrès)	2013	Français	Sheet to be filled to manage events & progress
210	EDF	Fiche incident environnemental de Campenon Bernard	2012	Français	Campenon Bernard's Environmental incident sheet (example of an event in 2012)
211	EDF	Visite QSSE (aspects qualité et environnemental)	2012	Français	QHSE visit (quality and environment example)
212	EDF	Visite QSSE (aspects sécurité, sûreté et environnemental)	2012	Français	QHSE visit (safety/security and environment example)
213	EDF	Test de procédure d'urgence environnementale n°1 - plateforme Gavet rapproché	2012	Français	Test of the environmental emergency procedure
214	EDF	Visite QSSE (aspects sécurité et environnemental)	2012	Français	QSSE visit (security and environment example)
215	EDF	Fiche TEP (Traitement d'Événement ou de Progrès) - Exemple : projection de cailloux lors du premier tir	2012	Français	Sheet to be filled to manage events & progress - example

216	EDF	Fiche TEP (Traitement d'Événement ou de Progrès) - Exemple : mise en suspension de sédiments dans la Romanche lors du confortement des berges	2012	Français	Sheet to be filled to manage events & progress - example
217	EDF	Canevas pour l'analyse des accidents du travail (CIH et prestataires)		Français	Blank sheet for accident analysis during work (for CIH and subcontractors)
218	EDF	Canevas pour visite QSSE		Français	Blank sheet for QHSE visit
219	EDF	Canevas pour visite QSSE par le hiérarchique		Français	Blank sheet for QHSE visit by the manager
220	EDF	Fiche de suivi de l'auscultation des batardeaux	2013	Français	Cofferdam monitoring
221	EDF	Pièce 16 - règlement d'eau pour le dossier de concession	2010	Français	Draft water management plan
222	EDF	Tableau suivi des coûts et des seuils de décision	2013	Français	Budget monitoring (and milestones)
223	ULG	Prise d'eau de Livet – Modélisation du fonctionnement hydraulique - Modélisations complémentaires (Université de Liège)	2011	Français	Hydraulic operation of Livet's water intake (additional study of Université de Liège)
224	ULG	Calcul 2D des écoulements de la Romanche à proximité des ouvrages du futur aménagement hydroélectrique de Gavet - Secteur des ouvrages de prise d'eau	2011	Français	2D modeling of Romanche closed to the water intake (study of Université de Liège)
225	ULG	Calcul des niveaux d'eau sur la Romanche entre le seuil Keller et l'amont du barrage de Livet (premiers essais)	2009	Français	Water level on the Romanche river (first tests)
226	ULG	Calcul des niveaux d'eau sur la Romanche entre le seuil Keller et l'amont du barrage de Livet	2008	Français	Water level on the Romanche river
227	ULG	Prise d'eau de Livet – Modélisation du	2008	Français	Water intake hydraulic modelisation

		fonctionnement hydraulique			
228	ULG	Etude du fonctionnement hydro-sédimentaire du barrage - prise d'eau de Livet (Gavet) sur la Romanche (F)	2008	Français	Sediment study of the Romanche (dam and water intake)
229	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 1 out of 10
230	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir - La centrale de Livet	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 2 out of 10
231	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir - La centrale Les Vernes	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 3 out of 10
232	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir - La centrale Les Roberts	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 4 out of 10
233	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir - la centrale Rioupéroux	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 5 out of 10
234	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir - la centrale les Clavaux	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 6 out of 10

235	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir - la centrale Pierre-Eybesse	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 7 out of 10
236	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir - Vestiges de Gavet	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 8 out of 10
237	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir - Préconisations	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 9 out of 10
238	CG38	Approche architecturale des bâtiments et des dispositifs extérieurs et contribution à la réflexion sur leur devenir - Pistes pour réaménagements	2007	Français	Architectural study of the Conseil General on Romanche's HPPs - 10 out of 10
239	CG38	Invitation du CG38 pour parler du démantèlement (Maison Romanche Energie)	2012	Français	Invitation by CG38 for a meeting dedicated to decommissioning of HPPs
240	EDF	Presentation d'EDF lors de la réunion	2012	Français	EDF presentation during the above meeting dedicated to decommissioning of HPPs
241	EDF	Mission de coordination SPS en phase de réalisation du chantier de Gavet	2010	Français	Coordinator SPS
242	EDF	Choix de l'APAVE pour la mission de coordonnateur SPS	2010	Français	Choice of the coordinator SPS
243	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la gouvernance	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
244	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la gestion des enjeux E&S	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic

245	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la gestion intégrée de projet	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
246	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la sûreté des infrastructures (1/3)	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
247	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la sûreté des infrastructures (2/3)	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
248	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la sûreté des infrastructures (3/3)	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
249	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la viabilité financière	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
250	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives aux bénéfices du projet	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
251	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives aux bénéfices du projet	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
252	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives aux bénéfices du projet	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
253	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la passation des marchés	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic

254	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives aux conditions de travail & main d'œuvre	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
255	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à l'héritage culturel	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
256	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à l'héritage culturel	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
257	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la biodiversité	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
258	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives aux déchets, bruits et qualité de l'air	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
259	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives à la préparation et la mise en eau du réservoir	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
260	EDF	Mail d'Emmanuel BRANCHE du 4 juillet 2013 pour répondre aux questions relatives au régime des débits à l'aval	2013	English	Emmanuel BRANCHE's email (4 July 2013) with answers to Doug's email dated back 26 June 2013. This email provides information, explanation and documents as evidence of this topic
261	EDF	Main courante 2013 à la Maison Romanche Energie	2013	Français	Record of complaints/ideas made by people who visit the MRE for the year 2013
262	EDF	THE SUSTAINABLE DEVELOPMENT CHARTER BETWEEN EDF SA AND ITS SUPPLIERS	2006	English	
263	EDF	Carnet de chantier	2013	Français	It lists the main steps of development of the project in conjunction with periodic visits DREALs-SPR-SOH. It meets the requirements of Article 9 of the Concession Gavet ; it is updated at each DREAL's visits

264	EDF	La Lettre d'infos d'EDF Romanche Energies n°1 - février 2009	2009	Français	Presentation of the project, interview of Christian PICHOU (President CG38)
265	EDF	La Lettre d'infos d'EDF Romanche Energies n°2 - avril 2009	2009	Français	"Public enquiry" explanation, interview of Gilbert DUPONT (mayor Gavet)
266	EDF	La Lettre d'infos d'EDF Romanche Energies n°3 - janvier 2010	2010	Français	From project to work construction, focus on water issue, interview of Charles Galvin (Président de la Commission Locale de l'Eau CLE)
267	EDF	La Lettre d'infos d'EDF Romanche Energies n°4 - octobre 2010	2010	Français	Protection & securisation of the cliffs, presentation of Maison Romanche Energie, European tendering, potable water, open-day for patrimonial/culturage heritage, interview of Florent BAUD (project manager Gavet)
268	EDF	La Lettre d'infos d'EDF Romanche Energies n°5 - février 2011	2011	Français	Access for the project, explanation of the concession rules, cooperation EDF-Municipaluty for the water supply system, maintenance program for Les Vernes, interview of Marie-Noelle BATTISTEL (Mayor Salle en Beaumont & Deputy 38)
269	EDF	La Lettre d'infos d'EDF Romanche Energies n°6 - juillet 2011	2011	Français	Work in rivers, public meeting 26 May, preparation of decommissioning, interview of Gilles PERSIA (Coordonnateur Sécurité, Prévention, Santé)
270	EDF	La Lettre d'infos d'EDF Romanche Energies n°7 - octobre 2011	2011	Français	New bridge at Les Ponants, inauguration of Maison Romanche Energies, consultation for site requalification, operation of new water system, Les Vernes, interview of Paul GAUDRON (project manager new project)
271	EDF	La Lettre d'infos d'EDF Romanche Energies n°8 - décembre 2011	2011	Français	Explanation of contractors that have been selected, science festival at Maison Romanche Energies, resettlement of reptiles, interview Thierry POULAIN (Architecte du Patrimoine en charge de la restauration de la centrale des Vernes)
272	EDF	La Lettre d'infos d'EDF Romanche Energies n°9 - mars 2012	2012	Français	Biodiversity a priority for EDF, Les Ponants bridge is owned by the municipality, environment & the contractors: role of EDF, interview with Gilles STRAPPAZZON (Conseiller Général du Canton de Vizille, Président de la Commission du développement durable, de l'environnement, de l'habitat et de l'urbanisme au Conseil Général de l'Isère, Président du Comité de Rivière Romanche, Maire de Saint-Barthélémy-de-Séchilienne)
273	EDF	La Lettre d'infos d'EDF Romanche Energies n°10 - juin 2012	2012	Français	Increase of works on site, lot of stakeholders interest for the project, issues of the riparian ecosystems, interview of M. LEDENVIC (Director DREAL)

274	EDF	La Lettre d'infos d'EDF Romanche Energies n°11 - février 2019	2012	Français	Temporary diversion of Romanche river, bund/merlon at Les Ponants to increase safety, explanation of underground works, fisheries backup, nature & cultural heritage at the heart of the project, interview of M. Francis MENEU (FRAPNA President)
275	EDF	La Lettre d'infos d'EDF Romanche Energies n°12 - décembre 2012	2012	Français	Rosali TBM, employment creation thanks to the project, fish pass, view-points of the site construction, interview of 3 contractors
276	EDF	La Lettre d'infos d'EDF Romanche Energies n°13 - avril 2013	2013	Français	construction site on pictures, Rosali TBM baptism, environmental management plan, Les Vernes work in progress, interview of PATRICK GAUTHIER (Directeur de travaux chez Dodin Campenon Bernard)
277	EDF	Planning global détaillé du projet Gavet	2013	Français	Gavet's project overall planning (detailed version)
278	EDF	Organisation of the water management in France	2013	English	
279	EDF	Alignment of EDF with internationally recognised labour rights	2013	English	Document that highlights and brings evidence on how EDF is aligned with internationally recognised labour rights (ILO, etc.)
280	EDF	Présentation aux acteurs des l'eau	2012	Français	UP Alpes makes report on its operating projects publicly during dedicated meetings for instance (the so-called water stakeholder meetings, where people are invited by river bassins or rivers for a presentation of the main). Please find enclosed for your information a powerpoint presentation of a meeting taken place in 2012 on Oisans
281	EDF	Courrier d'EDF qui s'engage pour les travaux sur le réseau d'eau potable de la mairie de Gavet	2009	Français	EDF's mail for commitment to the municipality in 2009 (water system management)
282	Municipality	Courrier de réponse de la Mairie sur le système d'eau potable	2010	Français	EDF's mail for commitment to the municipality additional vs. 2009 in 2010
283	Municipality / EDF	Convention entre EDF et la Mairie pour le système d'eau potable	2009	Français	Convention work with the Town in 2009
284	Municipality / EDF	Addendum à la convention sur le système d'eau potable de la mairie	2011	Français	Convention work with the town addendum in 2011

285	EDF	Carte de la traversée de Gavet dans le cadre de la sécurisation des abords de l'école	2011	Français	safety/security of the school: map of the Gavet's school and roads
286	Municipality	Accord du conseil municipal pour la sécurisation de l'école	2011	Français	municipality commitment to sign the convention with EDF
287	Municipality / EDF	Convention entre EDF et la Mairie pour la sécurisation de l'école	2011	Français	Convention with the town for the school
288	Municipality / EDF	Convention entre EDF et la Mairie pour le transfert de la Maison Romanche Energies (MRE) à l'issue des travaux	2010	Français	Maison Romanche Energies: the convention
289	Municipality	Accord du conseil municipal pour la MRE	2010	Français	Municipality agreement concerning MRE
290	EDF	AVIS DE MARCHÉ – SECTEURS SPÉCIAUX - GAVET	2009	Français	The work contract notices for the EC tendering process
291	EDF	AVIS DE MARCHÉ – SECTEURS SPÉCIAUX - GAVET	2009	Français	The work contract notices for the EC tendering process
292	EDF	Table des matières des fondamentaux des achats	2008	Français	The rules for the "Code of ethics / corruption" are disseminated to stakeholders purchases in "The Fundamentals of Purchasing" - Table of contents
293	EDF	La déontologie des relations avec les fournisseurs	2000	Français	Code - Ethics supplier relationships
294	EDF	Mémento des Achats Responsables à EDF	2012	Français	EDF Memento for Responsible Purchasing
295	EDF	VADEMECUM - Intégration des aspects Développement Durable et Responsabilité Sociale (DD/RS) dans les différentes étapes de l'acte d'achat	2013	Français	Vademecum for the integration of sustainable development and social responsibility issues for all stages of the procurement

296	EDF	6 films on project web site	2013	Français	Publicly available on UP Alpes website.
297	EDF	Dossier de Presse, Nouvel aménagement hydraulique Romanche Gavet	May 2013	Français	Available at http://energie.edf.com/hydraulique/hydraulique/carte-des-centrales-et-barrages/unite-de-production-alpes/publications-47756.html (as of July, 2013).
298	EDF	Les tunneliers – Numéro spécial de la lettre d’info EDF Romanche Energies	April 2013	Français	Project newsletters, special issue describing the TBMs.
299	EDF	Plaquette de Présentation du Projet	2011	Français	Available at http://energie.edf.com/hydraulique/hydraulique/carte-des-centrales-et-barrages/unite-de-production-alpes/publications-47756.html (as of July, 2013).
300	EDF	Etude acoustique environnementale Livet Gavet	2009	Français	Baseline noise study – I cannot find anywhere else Ref: D4122/RAP/2009-00078-A
301	EDF	Rapport de mesures de bruit	2012	Français	5500-AAH-5910080812
302	Ducluzaux, A. Président, APHID	Patrimoine Industriel de la Vallée de la Romanche	1996	Français	Report on industrial heritage of the Romanche and proposals for its conservation, by the Association of Industrial Heritage of Dauphiné.
303	Patrimoine Romanche	List of members of Council of Directors	2013	Français	
304	Patrimoine Romanche	Articles of Association of the Patrimoine Romanche	2013	Français	
305	CBR	Chute de Gavet – Phase Exécution – Ouvrages amont - Note d’organisation générale du Plan d’Assurance Environnement	2012	French	Environmental insurance plan of CBR for the project Ref. 002_GAVE-CBR2-X-028-36600-A_Plan-Assurance-Environnemental.pdf
306	CBR	Annexe 2 : bordereau de suivi des déchets inertes	2012	French	Inert waste monitoring document

					307Ref. 003_GAVE-CBR2-A-12-06-29-a_BSD-A001.pdf
307	CBR	Aménagement Romanche Gavet– Ouvrages de Prise - Note descriptive du Plan d’Installations de Chantier	2012	French	Descriptive note of the site plan Ref. 004_GAVE-CBR2-X-024-16401-A2_Note-Descriptive-Plan-Installations-Chantier.pdf
308	EDF	AMENAGEMENT HYDROELECTRIQUE DE LA CHUTE DE GAVET (ISERE) - MARCHE OUVRAGES DE PRISE D’EAU - MARCHE n° 5500-AAH-5910084432 - PIECE N° 2 . Cahier des Clauses Techniques Particulières C.C.T.P. - Pièce 2.1 – Partie 1 DESCRIPTION DES OUVRAGES ET DU CONTEXTE		French	Inlet structures: Special technical clauses (different schemes and context) Ref. 007_IH.GAVE.CBR2-CTR.00003A_Piece 2.1_Partie 1_CCTP OP-p29&30&32.pdf
309	EDF	AMENAGEMENT HYDROELECTRIQUE DE LA CHUTE DE GAVET (ISERE) - MARCHE OUVRAGES DE PRISE D’EAU - MARCHE n° 5500-AAH-5910084432 - PIECE N° 2. Cahier des Clauses Techniques Particulières C.C.T.P. - Pièce 2.1 – Partie 2 PRESCRIPTIONS GENERALES ET PARTICULIERES D’EXECUTION		French	Inlet structures: Special technical clauses (general & detailed specifications for implementation) Ref. 009_IH.GAVE.CBR2-CTR.00004A_Piece 2.1_Partie 2_CCTP OP-p45to48.pdf
310	EDF	AMENAGEMENT HYDROELECTRIQUE DE LA CHUTE DE GAVET (ISERE) - MARCHE OUVRAGES DE PRISE D’EAU - MARCHE n° 5500-AAH-5910084432 - PIECE N° 2. Cahier des Clauses Techniques Particulières C.C.T.P. - Pièce 2.1 – Partie 3 SPECIFICATIONS TECHNIQUES DETAILLEES (hors bâtiment d’exploitation)		French	Inlet structures: Special technical clauses (detailed technical specifications) Ref. 010_IH.GAVE.CBR2-CTR.00005A_Piece 2.1_Partie 3_CCTP OP-art1-13.pdf

311	EDF	<p>AMENAGEMENT HYDROELECTRIQUE DE LA CHUTE DE GAVET (ISERE) - MARCHE OUVRAGES DE PRISE D'EAU - MARCHE n° 5500-AAH-5910084432 - PIECE N°4.</p> <p>PIECES FINANCIERES</p> <p>Pièce 4.1</p> <p>BORDEREAU DES PRIX UNITAIRES ET DETAIL ESTIMATIF</p>		French	<p>Description of the different contracts</p> <p>Ref. 008_IH.GAVE.CBR2-CTR.00015A_Pièce 4.1_Titre 1_Partie B-p30.pdf</p>
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Appendix D: Visual Evidence



Photo 1: Public information board adjacent to site and road



Photo 2: Additional public information board adjacent to site and road



Photo 3: Public information brochure on tunnelling works



Photo 4: Leaflet inviting the public to an information meeting at the MRE



Photo 5: Public notice announcing the MRE public opening hours



Photo 6: Example of structures to be removed



Photo 7: Example of structures to be removed: penstocks near Les Clavaux



Photo 8: Example of structures to be removed: [what actually is this?] near Les Clavaux



Photo 9: Stabilisation measures and netting on cliffs adjacent to intake construction site



Photo 10: One of several coffer dam monitoring points



Photo 11: Stone wall constructed to prevent rockfalls from the cliffs from tumbling into the construction site



Photo 12: 'Notice to Visitors' – site security notice



Photo 13: Cement factory adjacent to intake construction site



Photo 14: Device to count number of persons entering and leaving the tunnel



Photo 15: Maison Romanche Energie



Photo 16: Loading platforms designed to reduce risk of unloading from truck, taken in response to a fatal incident

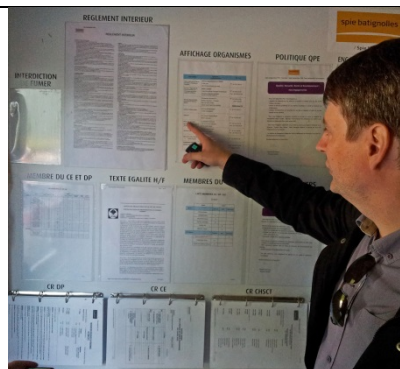


Photo 17: SPIE noticeboard showing safety information



Photo 18: Livet II (on the left) and Livet I (right)

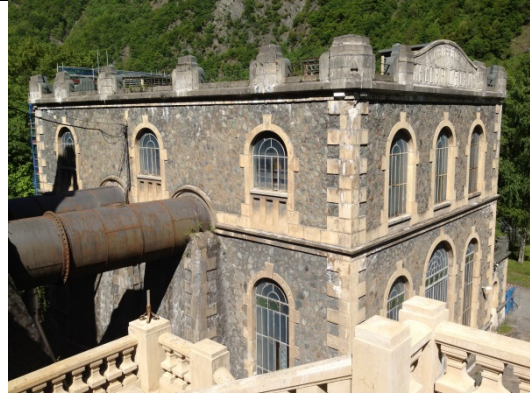


Photo 19: Les Vernes and penstocks



Photo 20: Les Vernes steps, modelled on steps at Chateau des Vizilles



Photo 21: Original machinery at Les Vernes



Photo 22: Les Roberts



Photo 23: Hydrocarbon storage at [which site]



Photo 24: Metal fraction of sorted waste



Photo 25: Wood fraction of sorted waste



Photo 26: The occupational health services vehicle at site

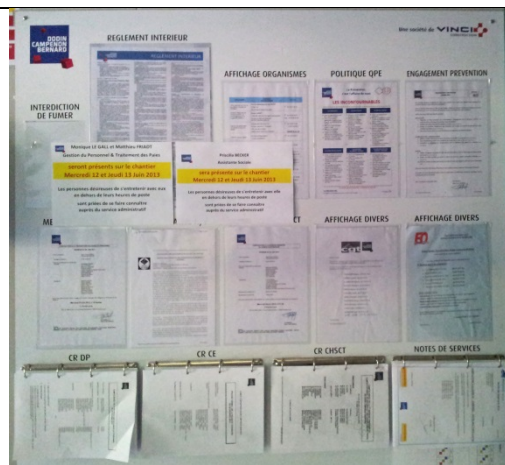


Photo 27: Vinci's notice board